12-13-1841

# Message from the President of the United States, transmitting, in compliance, in part, with a resolution of the Senate, a report from the Secretary of War respecting the defences of the country.

# MESSAGE

FROM

# THE PRESIDENT OF THE UNITED STATES,

TRANSMITTING,

*In compliance, in part, with a resolution of the Senate, a report from the Secretary of War respecting the defences of the country.*

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DECEMBER 13, 1841.
Read, and ordered to be printed.

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*To the Senate of the United States:*

I transmit herewith a report from the War Department, in compliance with so much of the resolution of the Senate, of March 3, 1841, respecting the military and naval defences of the country, as relates to the defences under the superintendence of that Department.

JOHN TYLER.

WASHINGTON, *December* 7, 1841.

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DEPARTMENT OF WAR,
*December* 6, 1841.

SIR: On the 3d of March, 1841, a resolution was adopted by the Senate, requesting the President of the United States to cause to be laid before the Senate at the commencement of the (then) next session of Congress, reports upon the military and naval defences of the country, which were required to imbody various information upon the subjects specified in the resolution. Upon entering on the discharge of the duties of the Department, I found that a report in compliance with the resolution, had been prepared by my immediate predecessor. Concurring, generally, in the views it contains, and finding nothing upon which I am prepared at this time to express any different opinion, it has appeared to me equally just and respectful to the gentleman, who has obviously devoted much time and consideration to the subject, to submit the report thus prepared as that of the Department. A copy of the record of it, in this office, is therefore transmitted herewith, as the answer to so much of the resolution of the Senate as relates to the military defences of the country.

Very respectfully, your most obedient servant,

JOHN C. SPENCER.

To the PRESIDENT *of the United States.*

Thomas Allen, print.

DEPARTMENT OF WAR, *August* 30, 1841.

SIR: I have the honor to submit the accompanying reports from the officers at the head of the corps of military engineers, and the Ordnance Department, respectively, on the several points connected with the public defence, embraced in the resolution of the Senate of the 3d day of March last, and which are, at the same time, within the superintendence of this Department.

The views and plans presented in these papers, are fully sustained and approved by the report of a board composed of the most distinguished and able officers in the service, made under the direction of this Department, and in compliance with a resolution of the Senate on the 9th day of May, 1840. The well-considered opinions of experienced and scientific gentlemen, upon subjects within the line of a profession which, it is well known, that no high degree of skill or competency can be attained without a particular course of study and observation, are entitled to great weight; and none of inferior knowledge of the subject, and who desires the national safety and honor, will venture to oppose them without diffidence.

By reference to the report which I had the honor to submit at the commencement of the present session of Congress, it will be perceived that the approval and recommendation of the plan and estimates for the military defences of the country, then presented by the Chief Engineer, and which do not vary materially from those now brought forward by the same officer, were limited to those works which were supposed to be indispensable to what might be considered a good state of defensive preparations for war, and which might be completed in a reasonable time. To secure this limited object, it was estimated that an expenditure of $9,673,547 would be required for the construction and repair of fortifications on the Atlantic and Gulf coast, and $2,493,000 for their appropriate armament. The expenditure of the further sum of $2,112,500 for the defence of the Southern, and $895,000 for the Western frontiers, ought to have been included, which would have made the whole expenditure for the construction and repairs of fortifications, recommended by the Department, $13,751,047. In the opinion of the Chief Engineer, as will appear from his report, a proper system of defence for the Atlantic and Gulf coast—a system which will give due security to all the important and exposed points—will require a still further expenditure of $19,521,824 for the construction of an additional class of works, and $3,735,330 for their armament, making an aggregate of expenditure for this class, amounting to $23,257,154.

It appears from the report of the 9th of May, 1840, before referred to, that there has been expended in the construction and repairs of works already completed, or under construction, and constituting part of the system recommended by the Chief Engineer, the sum of $13,323,828. If, therefore, the entire system of land defences recommended in the report of the Chief Engineer, for the protection of a frontier, inland and maritime, of upward of eight thousand miles extent, should be adopted and carried out, the expenditure upon the several works will have been $45,449,699, and for the armament $6,228,370, making a grand total of $51,677,929. This appears to be a large sum to be expended upon fortifications; and the country is not prepared to approve a system of public defence upon so extended and costly a scale; yet, it is but justice to the patriotic and intelligent officers who urge its adoption, to remark, that the aggregate expenditure proposed by them, exceeds, by a few millions only, the public revenue for the single year of

1836, nor does it exceed double the amount of the annual revenue from the usual sources, when the country is in a condition of ordinary prosperity. A far greater amount has been expended upon many single harbors, cities, and other points of military importance in the old world. The defences of the city of Quebec, the principal fortress of the British possessions on this continent, it is believed, cannot have cost less than ten millions; and it is stated upon respectable authority that the Cabanas, the principal fort erected for the protection of the harbor and city of Havana, in Cuba, cost the Government of Spain sixty millions of dollars! It is also proper to state, that the cost of the entire system of permanent and fixed defences presented by the Chief Engineer, is decidedly more moderate than that of other plans of national defence, which can claim the support of names of distinction in the military history of the country. A distinguished officer, high in command in the army, has for years earnestly pressed upon the attention of Congress and the public, a system of defence by railroads and floating batteries, having undoubtedly much to recommend it; yet, if adopted and executed in all its parts, would require an expenditure much greater than the system presented in the accompanying report.

Nevertheless, I do not consider it wise or expedient, so far in advance of the period when a large portion of the new works projected andrecommended can be constructed, to assume that they will continue to be necessary and proper. That will depend greatly upon the improvements now being made in the application of existing inventions to war purposes, and of others that may be rationally expected to be made in the meantime. A period of ten years has become sufficient, in point of duration, to mark an epoch in the onward progress of modern invention and improvement. Even five years may modify, materially, plans of defence now reputed wisest and most indispensable. But these anticipations of the future should not deter those who are now charged with the high trust of providing for the national welfare and security, from the adoption and vigorous execution of the system of defence deemed most effective for the present, at least so far as to cover the approaches to all our most important commercial and naval depots. To this extent I insisted, in a former report from this Department, upon the necessity of conforming to the recommendations of the Chief Engineer. I still adhere to the opinion then expressed on this point, leaving it exclusively to those who shall have charge of the subject hereafter; and when the question shall properly arise, to decide whether the system shall be completed, by the construction of all the works enumerated in the accompanying report, or whether some other and better plan of national defence may not, with advantage, be substituted for it.

But, from causes not necessary to be explained, fortifications and extravagance have, in popular estimation, become synonymous terms, and an impression prevails with many that such works, even upon the limited scale recommended by this Department, are comparatively useless; hence the country is prone to embrace any new theory which holds out the promise of greater economy with any degree of efficiency. Since the recent and successful experiments in the navigation of the Atlantic by steam, and the consequent changes anticipated in maritime warfare, it is not an uncommon impression that fortifications, and all other land defences, may be dispensed with altogether; and that the navy, improved and strengthened by war-steamers and floating batteries, may be safely and exclusively relied upon for the defence of our extensive seacoast. Another error, not less to

be regretted, has obtained some hold upon the public mind since the extension of steam navigation, already adverted to, and the improvements lately suggested in the means of defending the seaboard. It is, that the defence of our numerous inlets, harbors, and naval depots will, by these improvements, be rendered not only more certain and easy, but less expensive than heretofore, and, therefore, of diminished importance in every point of view. The very reverse of these conclusions, it may be justly apprehended, will be realized in the experience of the future. The increased facilities which the late extension of steam navigation will give to any great maritime Power, holding possession of one or more naval depots on this side of the Atlantic, in concentrating a large naval or military force upon any one of the numerous assailable points upon our extensive seacoast—the celerity of movement, and the greater certainty and precision which will be thereby secured in the execution of all the details of an attack, enabling an enemy to make it, in every instance, a *surprise*—will probably create a necessity for increasing our defences in some form, at an expense far exceeding anything heretofore deemed important or necessary to reasonable security. To provide adequate defences for every exposed point, may become so great a tax upon the resources of the country that it may come to be regarded a less evil to leave the largest portion of our coast at the mercy of an enemy, and to apply our whole disposable means to bring to bear upon it. But the prospect of successful defence, by the navy alone, vanishes altogether when we reflect that it is only in infancy, and that for a long time it must be inferior to the naval armaments of several of the Powers of Europe. Whether the United States will be able, at any time, to contend with them upon the ocean, it is obvious will depend upon the successful development of our naval resources after the commencement of a war; but how could this development take place in the face of a much more powerful enemy, if our depots and navy-yards are suffered to remain without adequate protection by fortifications, and there are no harbors in which our ships of war may take refuge, and remain in safety when pursued by superior squadrons? It would be fatal to the national honor to neglect to fortify sufficiently and amply those passes, by land and water, by which an enemy could approach the depositories of our naval supplies, and also the principal harbors of easy access to our own vessels.

The necessary quality of buoyancy in war-steamers and floating batteries requires that they should be constituted mainly of wood; and whether of wood or iron, their destructibility, by the usual missiles employed in war, will be neither greater nor less than that of the war-steamers and floating batteries, with which an enemy may attack them. It is clear, then, that nothing will be gained by their exclusive employment, in this point of view. It is equally clear that if an enemy is able to concentrate a much superior force upon any one of our great harbors and naval depots than is provided for its defence, he must, without some extraordinary casualty, be successful. To guard, therefore, against the capture or destruction of all our opulent cities and great naval depots upon the seaboard, the Government must provide a greater number of war-steamers and floating batteries, *for the defence of each of them*, than any foreign nation will probably be able to assemble upon our coast, and thus have it in his power, by uniting his whole force in an attack upon one point at a time, to lay under contribution or destroy the whole.

But suppose each of our great harbors or depots should be thus defended,

and that all the channels or passes by water could be so guarded and blocked up by floating batteries, or with the advantages of position to set at defiance any naval force which could be brought to the attack, without fortifications to guard the passes or avenues over which an enemy could reach his object by land, what would prevent him from disembarking a sufficient land force at some other, but not distant point, upon the coast and effecting all his purposes of spoliation and destruction? It is manifest that something more will be wanting than war-steamers and floating batteries to give even tolerable security to our cities and naval depots. If fortifications are to be dispensed with, it is clear, that to afford them adequate protection and security against the sudden assaults of an enemy approaching by sea, will require, not only such a preparation of war-steamers and floating batteries as already described, but a stationary land force sufficient in numbers and discipline to resist any number of veteran troops the enemy might have it in his power to employ as an auxiliary force in his enterprises upon our shores.

Supposing the defences of a harbor, by fortifications, to be complete, and the attacking ships or war-steamers of an enemy shall have succeeding in passing the outer channels leading to it, without material damage from the forts designed to guard them; or if they shall have taken advantage of the darkness of the night, and passed them unobserved, they will have gained but little by that success. They will be exposed at every point within, to the fire of one or more forts or land-batteries. They will be able to find no anchorage or resting-place where they will not be liable to be disabled, burnt, or blown up, by the shells and hot shot discharged under protection of walls, impenetrable to the shot of an enemy, except at the gun ports. Not so, however, when floating defences are exclusively relied upon. They will have no advantage in the fight over the attacking force—they will be equally exposed and combustible; and when once overcome, all resistance ceases, and the success of the enemy will be complete.

On the question of the relative efficiency and cheapness of defences by fortifications or fixed batteries and by ships of war and floating batteries, several points deserve consideration.

The comparative efficiency of guns in forts and on board ships of war or floating batteries when brought into action as antagonist forces, has been variously estimated, but the results of experience seem to justify the opinion, that one gun in a fort, advantageously situated, is equal to ten on board an attacking squadron of ships of war. The relative expense of guns in forts and on board ships of war or floating batteries is not so great, but still strikingly disproportionate. The most favorable estimate will show, that guns afloat will cost, upon an average, a third more than the cost of guns in forts. Well-constructed forts, bearing any number of guns, may be erected at less than half the amount required to build good steam-batteries bearing the same number of guns. The steamships, now on the stocks at New York and Philadelphia, of 1,700 tons burden, and designed to carry only eight guns each, it is estimated, will cost $600,000 each. A floating battery of the largest class, contemplated by a distinguished advocate for that mode of harbor defence, carrying two hundred guns, with its tow-boats, it is estimated, cannot cost less than $1,400,000, and the smallest, carrying one hundred and twenty guns, not less than $700,000. A ship of the line, carrying eighty guns, it is estimated, will cost, without her armament, $500,000. Fort Adams is constructed for four hundred and fifty-eight guns; when finished, will have cost $1,400,000. Forts are built of solid, and, for the most part,

of imperishable materials. By proper care and a small annual expenditure for repairs, they will last and be available for centuries: while the cost of the repairs that ships of war and floating batteries will require, in every twelve or fifteen years, will equal the cost of the original construction. In other words, in respect to the expense, vessels of war and floating batteries will require to be reconstructed every twelve or fifteen years. The injury done to fortifications in the most serious engagements can usually be repaired in a few days, or, at most, in a few weeks, while the damages to ships of war and floating batteries, in a similar engagement, would require extensive repairs in every instance, and often renders them unworthy of repair.

Upon these data, a satisfactory estimate may be made of the relative expense of the two modes of defending our principal harbors and naval depots.

In presenting these views, I would not be understood, by any means, as disparaging the value and efficiency of war-steamers and floating batteries, when employed as an auxiliary force in any system of coast or harbor defence that may be adopted. Nor is any idea entertained that they ought, or can, be altogether dispensed with.

All which is respectfully submitted.

JOHN BELL.

To the PRESIDENT.

*Report of the Chief Engineer in answer to the resolutions of the Senate of March* 3, 1841, *respecting the defences of the country.*

ENGINEER DEPARTMENT, *Washington, July* 1, 1841

SIR: I have the honor to submit the following remarks, in compliance with your directions, touching a series of resolutions of the Senate of the 3d of March last, requiring information in relation to various subjects connected with the national defences, and calling for a report on such portions of these resolutions as belong to this department.

Most of the information required by the resolutions, in relation to the permanent defences, will be found in a report made by a board of officers to the Secretary of War, 23d April, 1840 (see Senate document 451, 1st session, 26th Congress). This document may be further referred to as giving, in detail, much information in relation to the system of national defence; and from it is drawn the greater portion of what will be found imbodied in the following report.

*Northern frontier.*

This frontier extends, as described by the terms of the resolutions, from Lake Superior to Passamaquoddy bay, a distance of somewhat more than two thousand miles, binding all the way on the British American provinces.

Whether we regard the strongly-marked geographical features of this frontier, presenting, as it does, for the most part, a chain of great lakes or inland seas, stretching along the border, the common property of two nations, and affording facilities for an extensive commerce, almost rivalling that of the ocean itself; or, whether we look to the growing strength of our colonial neighbors, fostered by the immense power and resources of the mother-country, its vast importance cannot fail to impress us with the necessity of being prepared, not only for defence along that line, but also to act offensively, with decisive effect, in the event of our being involved in a national conflict.

From the peculiar character of this frontier, its defence must necessarily partake somewhat of the system applicable to the seacoast; for, although it is denominated inland, in contradiction to the latter, it is, nevertheless, maritime in many of its features, and must be treated accordingly for purposes of defence.

So important is the mastery on the lakes, in any military operations in that quarter, that it is scarcely to be doubted that, in the event of a war, there will be some naval preparations on both sides, and a struggle for the ascendency on those waters. Whichever power shall acquire that, even temporarily, will have the means of assailing his adversary with great effect along the shores of the lakes, in the absence of fortifications, by occupying the harbors, destroying the towns (some of which are fast advancing to the rank of cities), and controlling the commercial operations, of which those lakes constitute the principal channel. These considerations render it highly expedient, indeed necessary, to fortify the larger harbors on the lakes, as well as the more important passes on the straits and rivers by which they are connected.

Without entering fully into the military details of the subject, which might be deemed somewhat out of place here, regarding the object of the resolutions, which seems to look rather to the expense involved, the department will proceed to enumerate the works of defence deemed necessary on the northern frontier, beginning at Lake Superior; merely glancing at the effects and advantages which are likely to result from the establishment of those works.

1. *Fort at Falls of St. Mary.*—A fort here will control the communication between Lake Huron and Lake Superior, and, at least, prevent an enemy from availing itself of it for purposes of communication, and for the transportation of supplies, if it does not secure those important advantages to us; which it would do, unless counteracted by a work on the British side of the line. In that event, almost certain to occur, it would be neutralized, but would still serve to cover and protect our settlements along the St. Mary, and form a rallying point for local defence in times of alarm.

Estimated expense of fort, barracks, &c. - - - $75,000

2. *Fort at Michilimackinac.*—Although this position is somewhat interior, it is regarded of high importance from its geographical relations. A fort here, in conjunction with floating batteries, may be made to command, effectually, the approach to Lake Michigan, and shut out an enemy who might possess a naval ascendency on Lake Huron; thus protecting the entire circumference of Lake Michigan from attacks to which it would otherwise be exposed, even from a small force, and securing it to ourselves, as a safe channel of communication with the rich and productive States in the rear, whose shores it washes.

Estimated expense - - - - - - 50,000

3. *Fort at the foot of Lake Huron.*—A work here will control the outlet of Lake Huron, and interrupt the navigation between that and Lake St. Clair and the river Detroit. It will serve, also, to cover the settlements on that part of the frontier, and form a rallying point for the neighboring militia for local defence.

Estimated expense - - - - - - 50,000

4. *Fort and barrack establishment at Detroit.*—In the event of war, Detroit would undoubtedly be a point of considerable concentration of troops, not merely for the defence of that portion of the frontier, but for such offensive operations as might be deemed expedient in that quarter. It may be regarded as the centre of the upper section of the northern frontier, and has important relations, both geographical and military. Although true policy would, in such a case, dictate that our chief efforts should be directed against the vital points of the enemy's possessions as low down the line as practicable, still it might become expedient, with a view to distract his attention and divide his forces, to menace him above; and this is one of the points from which he might be assailed by minor expeditions, especially if he should relax his measures of defence, in looking to his safety elsewhere.

Estimated expense of barracks for one regiment, including site - - - - $150,000

Estimated expense of fort at Spring Wells, including site - - - - - 100,000

250,000

5. *Field-work and barrack establishment at or near Buffalo.* The wealth and commercial importance of Buffalo, and its close proximity to the British line, will make it an object of attack in time of war, unless it be protected by the

presence of a respectable force there. It may also become a point of concentration of troops for minor offensive movements, by way of diversion; and is thus, in every view, entitled to seasonable attention. An extensive barrack-establishment, together with batteries and such field-works as might be thrown up at brief notice, would be sufficient.

Estimated expense - - - - - - $150,000

6. *Fort Niagara to be rebuilt.*—A fort at this position is important, on the assumption (admitting, it is believed, of but little doubt) that, in time of war, there would be some naval preparations on Lake Ontario. It commands the entrance into the Niagara river; and a work here will shut the enemy's vessels out from that harbor, while it will afford protection under which ours may take shelter in case of need.

Estimated expense for repairs of buildings, and new barracks there - - - - - - 37,500

7. *Fort at Oswego.*—The growing importance of Oswego, the relation it bears to the great line of internal communication to the west, and its exposed situation, directly on the shore of the lake, whence it might be assailed by armed vessels without the co-operation of a land attack, call for works of defence to protect the harbor, and thus secure a safe retreat for our vessels in case of need, while we shut out those of the enemy. Besides, this place possesses many advantages for naval preparations for vessels not of great draught of water, and would probably be made a subordinate depot in time of war.

Estimated expense for barracks, quarters, storehouses, and magazine - - - - - - 25,000

8. *Fort at Sackett's Harbor.*—In the event of naval armaments to any considerable extent being resorted to on Lake Ontario, Sackett's Harbor, from its bold water, and its excellence as a harbor, would at once become a depot of great importance, the safety of which should be ensured against the enterprises of the enemy, by the timely construction of appropriate works of defence. Situated directly opposite to the strong point of Kingston, on the Canadian side, and adjacent to the head of the St. Lawrence, it is one of the points at which a concentration of troops may become expedient for the defence of that portion of the frontier and the protection of the naval depot. The barrack accommodations already established there are deemed sufficient, and it remains to fortify the approach to the harbor.

Estimated expense of fort and barracks, within - - 75,000

9. *Fort at the narrows of the St. Lawrence, below Ogdensburg.*—The chief object of a work here would be to cut off the enemy's communication by the river, between Montreal and Kingston, and thus prevent him from availing himself of that channel for the transportation of troops

and supplies, if we cannot entirely secure it to ourselves. By this obstruction on the St. Lawrence, he would be thrown altogether upon his back line of communication by the Ottowa, which, although it has the merit of being more secure from interruption, is longer, and more difficult, especially in seasons of drought. This would also be another point from which the enemy might be menaced, and from which auxiliary movements might be made, in aid of the chief attack.

Estimated expense of fort and barracks - - - $100,000

10. *Fort near the line on Lake Champlain.*—A work here may be made to command the pass of the lake, and is considered by far the most important of any proposed on the whole line of frontier.

The position of Lake Champlain is somewhat peculiar. While Ontario, Erie, Huron, and Superior stretch their whole length directly along the border (forming, in fact, the boundary), Champlain extends deeply into our territory, at right angles with the line of the frontier; and, while its southern extremity reaches almost to the Hudson, it finds its outlet, to the north, in the St. Lawrence, nearly midway between Montreal and Quebec, the two great objects of attack. This is undoubtedly the avenue by which the British possessions may be most effectually assailed; while, at the same time, it would afford to the enemy possessing a naval ascendency, equal facilities for bringing the war within our own borders, if it be left unfortified. It therefore becomes important to fortify a point as near the line as practicable, so as to shut out the enemy's vessels, and thus effect the double object of protecting the interior shores of the lake from the predatory attacks to which they would otherwise be exposed, and of securing it to ourselves, as the great channel by which our troops and supplies may be rapidly thrown forward to the points of attack or defence.

For a permanent work on Stony point (New York), including purchase of site - - - - $300,000

For a permanent work on Windmill point (Vt.), including purchase of site - - - 300,000

600,000

11. *Barrack establishment and depot at Plattsburg.*—In the event of war, Plattsburg will become the great depot for the operations on the Champlain frontier, the point of concentration of troops preparatory to any offensive movements, and the station of the reserve to sustain those movements, and the posts that may be established in advance. Even in time of peace, a respectable force should be posted here, especially during the continuance of the boundary question and border disturbances. Barracks for a regiment, at least, with suitable storehouses, are recommended to be erected, on a plan admitting of extension, if required, and also of suitable defensive arrangements.

Estimated expense of completing the works in progress on the scale here suggested. - - - - - 150,000

12. From Lake Champlain, eastward, the geographical features of the frontier materially change character, and require a corresponding modification of the means of defence. The line no longer intersects great lakes, admitting of naval preparations, nor binds on straits and rivers, the navigation of which may be controlled or interrupted by fortifications. It is altogether *inland*, until it reaches the St. Croix, where the principles that have been applied to other portions of the frontier similarly situated will again become applicable. Running on a parallel of latitude to the Connecticut river, and thence along a chain of highlands, not yet clearly defined, to the province of New Brunswick, there are, perhaps, no points immediately on the frontier sufficiently commanding, of themselves, to call for the establishment and maintenance of fortifications, or works of defence.

Should it ever become necessary to sustain, by force, our title to the territory now in dispute, it must be done, not by isolated forts along the frontier, commanding, probably, nothing beyond the range of their own guns; but by an active army, competent not only to occupy the country and hold it, but also to assume the offensive, if necessary, and carry the war beyond our borders.

But while it is not deemed expedient to construct a chain of forts along this portion of the frontier, it is considered a proper measure of precaution, in the present state of our relations with the British provinces, that positions should be selected, and preparatory arrangements made, for the establishment of depots of supplies at the head of navigation on the Kennebec and Penobscot. In the event of movements in that quarter, these would be proper points for the concentration of troops, and would serve as a base of operations, whether these should be offensive or defensive in their character.

Estimated expense of storehouses and other accommodations $150,000

13. *Fort at Calais, on the St. Croix river.*—A work here, while it will serve to cover that part of the State of Maine from the attacks to which it would otherwise be exposed, may, from its advanced position, be made to act an important though indirect part in the defence of the more northern portion of the frontier. Calais appears to be a very eligible point for the concentration of troops, with reference to existing circumstances. A strong force stationed here, threatening the enemy's posts on the lower St. John's, and held ready to strike in that direction, in case of movements from New Brunswick toward the disputed territory, could not fail to have a decisive influence on such movements; since it is obvious that they could not be made with safety, while exposed to attack in flank and rear, and to have their line of communication intercepted, and their depots seized, by a prompt movement on our part from the St. Croix.

Estimated expense of fort and barracks - - - 100,000

14. In reference to the northern frontier, generally, it is be-

lieved that, beside the defences which have been suggested along the border, chiefly for purposes of local protection, there should be a great central station at some position in the interior at which troops might be assembled for instruction, and where they would still be within supporting distance of the more exposed parts of the frontier.

Turning our views inland, in search of some single position at which preparations might be made for extended operations on this frontier, and from which aid and succor could always be speedily derived—some position which, while it shall be equally near to many important points of the enemy's possessions, shall afford at no time any indication of the direction in which our efforts are to be made; which will, if it be possible, unite the opposite qualities of being at the same time remote and proximate, far as to distance, but near as to time; which, while it brings a portion of the military resources of the country to the support of the inland frontier, and places them in the best attitude for operations in that quarter, whether defensive or offensive, at the same time takes them not away from the seacoast. Looking for these various properties, we find them all united, in a remarkable degree, in the position of Albany.

From this place by steamboat, canal-boat, or railroad car, troops and munitions could be transported in a short time to Buffalo, or onward to Detroit, to Oswego, to Sackett's Harbor, to Plattsburg, to Boston, and along the coast of New England; to New York by steamboat now, and soon by railroad also; and thence onward to Philadelphia, Baltimore, Washington, and the heart of the southern country, if necessary. In a word, Albany is a great central position, from which radiate the principal lines of communication to the north, to the south, to the east, and to the west, and combines so many advantages for a military depot, that the expediency of occupying it, and thus availing ourselves of those advantages, would seem to be manifest.

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|---|---|
| Estimated expense of the purchase of land, and the construction of barracks and other buildings - - - | $300,000 |
| Total for northern frontier - - - | 2,112,500 |

*Coast from Passamaquoddy Bay to Cape Florida.*

We will conduct the examination geographically, beginning at the northeastern extremity, and referring, in every case, to accompanying tables, which exhibit the several works in the order of relative importance as to time.

The eastern harbors of Maine are exposed in a peculiar manner. They are not only on the flank of our line, but they are also quite near the public establishments of the greatest of maritime powers. They are, moreover, as

yet, backed by only a thin population, and are, consequently, weak as well as exposed. The time may not, however, be very distant when, becoming wealthy and populous, they will be objects of a full portion of the national solicitude. Works designed for these harbors must, therefore, be calculated for the future—must be founded on the principle that they must defend places much more important than any now existing there; that, being near the possessions of a foreign power, they will be, in a particular manner, liable to sudden and repeated attacks; and that, lying at the extremity of the coast, they are liable to be but tardily succored. The works must, consequently, be competent to resist escalade, and to hold out for a few days. Feebler works might be more injurious than beneficial: their weakness would, in the first place, invite attack; and, it being often a great advantage to occupy fortified places in an adversary's territory, the enemy could prepare himself to remedy the deficiencies of the forts, after they should fall into his hands, by adding temporary works, by providing strong garrisons, and by aiding the defence with his vessels.

No surveys have been made of these harbors, and no plans formed for their defence. It may be well to observe here, once for all, that much confidence is not asked for the mere conjectures presented below, as to the number and cost of the works assigned for the protection of the harbors which have not yet been surveyed. In some cases there may be mistakes as to the number of forts and batteries needed, in others errors will exist in the estimated cost.

*Eastport* and *Machias* may be mentioned as places that will unquestionably be thought to need defensive works by the time, in the order of relative importance, the execution of them can be undertaken by the Government. There are several small towns eastward of Mount Desert island that may, at that period, deserve equal attention; at present, however, the places mentioned will be the only ones estimated for, and $100,000 will be assumed as the cost at each.—(Statement 1, table F.)

*Mount Desert island*, situated a little east of Penobscot bay, having a capacious and close harbor, affording anchorage for the highest class of vessels, and easily accessible from sea, offers a station for the navy of an enemy superior to any other on this part of the coast. From this point his cruisers might act with great effect against the navigation of the eastern coast, especially that of Maine, and his enterprises could be conducted with great rapidity against any points he might select. These considerations, added to the very great advantage, in certain political events, of our occupying a naval station thus advanced, whence we might act offensively, together with the expediency of providing places of succor on a part of the coast where vessels are so frequently perplexed in their navigation by the prevailing fogs, lead to the conclusion that the fortification, in a strong manner, of this roadstead may, before long, be necessary. A survey of this island was begun many years ago, but the party being called off to other duties, it was never completed. The project of defensive works has not been made. The entire cost may be, as assumed by the Engineer Department some years ago, $500,000.—(Statement 1, table F,)

*Castine.*—It would seem to be impossible, on this coast, to deprive an enemy enjoying naval superiority of harbors, or prevent his using them as stations during war, insular situations being so numerous, which his vessels would render unapproachable: but it seems proper that such of these positions as are the sites of towns, should be secured. Du-

ring the last war the English held the position of Castine for sometime, and left it at their pleasure. It is probable that a work costing about $50,000 would deter an enemy from again making choice of this position. (Statement 1, table F.)

*Penobscot bay.*—Upon this bay, and upon the river of the same name, flowing into it, are several flourishing towns and villages. Of the many bays which intersect the coast, the Penobscot is the one which presents the greatest number of safe and capacious anchorages. As before observed, a large portion of these harbors must, for the present, be left without defences, but the valuable commerce of the bay and river must be covered; and, to afford a secure retreat for such vessels as may be unable to place themselves under the protection of the works to the east or west of the bay, the passage of the river must be defended. The lowest point at which this can be done, without great expense, is opposite Bucksport, at the "narrows." A project has been given in for a fort at that position, estimated at $150,000.—(Statement 1, table D.)

*St. George's bay, Broad bay, Damariscotta, and Sheep's Cut.*—West of the Penobscot occur the abovementioned bays, all being deep indentations, leading to towns, villages, and various establishments of industry and enterprise. The bays have not been surveyed, and of course no plans have been formed for their defence. $400,000 are assigned to the defence of these waters. The Sheep's Cut is an excellent harbor of refuge for vessels of every size.—(Statement 1, table F.)

*Kennebec river.*—This river (one of the largest in the eastern States) enters the sea nearly midway between Cape Cod and the mouth of the St. Croix. It rises near the source of the Chaudière, which is a tributary of the St. Lawrence, and has once served as a line of operations against Quebec. The situation and extent of this river, the value of its products, and the active commerce of several very flourishing towns upon its banks, together with the excellence of the harbor within its mouth, will not permit its defence to be neglected. The surveys began many years ago, were never finished. The estimated cost of defences, as formerly reported by the Engineer Department, was $300,000. Positions near the mouth will permit a secure defence.—(Statement 1, table D.)

*Portland harbor.*—The protection of the town, of merchantmen belonging to it, and of the ships of war that may be stationed in this harbor, to watch over this part of the coast, or that may enter for shelter (all of them important objects), may be secured, as an inspection of the map of the harbor will show, by occupying Fort Preble point, House island, Hog Island Ledge, and Fish point.

If the two channels to the west and east of Hog island can be obstructed at small expense (to decide which some surveys are yet necessary), there will be no necessity for a battery on the ledge; and Fish point need be occupied only by such works as may be thrown up in time of war. The expense, as now estimated, of the works planned for this defence, will be $155,000 for Fort Preble, and $48,000 for House island; for Hog island channel, say $135,000.—(Statement 1, tables D, E, and F.)

*Saco, Kennebunk, and York.*—Small works, comparatively, will cover these places: $75,000 is assumed as the aggregate cost.—(Statement 1, table F.)

*Portsmouth harbor and navy-yard.*—The only good roadstead or harbor between Cape Elizabeth and Cape Ann, is Portsmouth harbor, within

the mouth of Piscataqua river. Line-of-battle ships can ascend as high as Fox point, seven miles above the town. This situation, sufficiently commodious for a secondary naval depot, designed to repair vessels of war, should be maintained; but it is to be regretted that the bay to the south of Fox point was not chosen as the site of the navy-yard, instead of Fernald's island. Being where it is, it will be necessary, in time of war, to make some particular dispositions for the protection of the navy-yard from an attack from the north shore of the river.

The position of Fort Constitution will certainly, and that of Fort McCleary will probably, be occupied by the defences, though the works themselves should give place to such as will better fulfil the object. The other positions for forts or batteries are Gerrish's point, Fishing island, and Clark's island; some, if not all of which, must be occupied. Surveys are required before the projects can be formed, or before estimates can be made; but there is reason for believing that the entire cost of fortifying this harbor will not fall short of $300,000.—(Statement 1, table D.)

*Newburyport harbor.*—The points forming the mouth of the harbor are continually changing; and it seems necessary, therefore, to rely, for the defence of the harbor, on works to be thrown up during a war. There is only a shoal draught of water. It is thought $100,000 will defend this harbor adequately.—(Statement 1, table F.)

*Gloucester harbor.*—The position of this harbor, near the extremity of Cape Ann, places it in close relation with the navigation of all Massachusetts bay, and imparts to it considerable importance. No surveys have yet been made, but it is believed that sufficient defence may be provided for $200,000.—(Statement 1, table E.) Should there be any occasion for defensive works before the proposed new works can be commenced, an expenditure of $10,000, in repairs on the old fort, will be required.—(Table A.)

*Beverly harbor.*—This harbor will be defended chiefly by a portion of the works designed for Salem. $50,000, in addition, will secure it.—(Statement 1, table F.)

*Salem harbor.*—The port of Salem is distant from Marblehead two miles, and separated therefrom by a peninsula. The occupation of the extremity of Winter island (where are the ruins of Fort Pickering) on one side, and Naugus head on the other, will effectually secure this harbor. Projects have been presented for this defence estimated to cost $225,000.—(Statement 1, tables D and F.) On a sudden emergency, old Fort Lee may be put in an effective state for $2,000.—(Table A.)

*Marblehead harbor.*—Beside covering, in some measure, the harbor of Boston, Salem and Marblehead harbors possess an important commerce of their own; and also afford shelter for vessels prevented, by certain winds, from entering Boston, or pursuing their course eastward. The proposed mode of defending Marblehead harbor consists in occupying, on the north side, the hillock which commands the present Fort Sewall (which will be superseded by the new work), and. on the south, the position of Jack's point. The two works will cost $318,000.—(Statement 1, tables D and F.)

To repair old Fort Sewall, which may be necessary if the new works are not soon begun, will require $10,000.—(Table A.)

*Boston harbor.*—We come now to the most important harbor in the eastern section of the coast, and, considering the relation to general commerce, and the interests of the navy, one of the most important in the whole Union.

After a careful examination of all the necessary conditions of such a problem, the board of naval officers and engineers, in their joint report of 1820, gave this harbor a preference over all other positions to the east, and inclusive of New York bay and the Hudson, as the seat of the great northern naval depot; and the Government, by the great additions and improvements that have from year to year been since made to the navy-yard on the Charlestown side, have virtually sanctioned the recommendation of the board. But, independent of the navy-yard, Boston is a city of great wealth, and possesses an extensive and active commerce.

The old works defended merely the interior basin from attacks by water; but, as it often happens that vessels enter Nantasket roads with a wind too scant to take them to the city, or are detained in President roads by light winds or an adverse tide, as the former, especially, is a very convenient anchorage whence to proceed to sea, and, above all, as Nantasket roads affords the best possible station for a blockading squadron, it was deemed indispensable to place permanent defences at the mouth of the harbor. The project of defence regards the existing works, with the necessary repairs and modifications, as constituting a second barrier.

Beside a permanent work, now well advanced, on George's island, it contemplates permanent works on Nantasket head—filling up the Broad sound channel, so as to leave no passage in that direction for ships of war.

Until the best draught for steam-vessels of war shall be well ascertained, it will not be safe to say to what depth the Broad sound channel should be restricted; nor, indeed, can it be positively asserted that this description of vessel can be conveniently excluded by such means. Other vessels *can*, however, be thus excluded; and steam-vessels passing this channel would still have to pass the inner barrier. The estimated cost of the works for this harbor is $1 710,000.

Beside the works of a permanent character, it will be necessary, in the event of a war, to erect several temporary works on certain positions in the harbor, and on the lateral approaches to the navy-yard.—(Statement 1, tables A, C, E, and F.)

*Plymouth and Provincetown harbors.*—These harbors have a commerce of some consequence of their own; but they are particularly interesting in reference to the port of Boston. While these are undefended, an enemy's squadron blockading Massachusetts bay will have ports of refuge under his lee, which would enable him to maintain his blockade, even throughout the most stormy seasons: knowing that the winds which would force him to seek shelter would be adverse to outward-bound, and fatal to such inward vessels as should venture near the cape. Were the enemy deprived of these harbors, he would be unable to enforce a rigorous investment, as he would be constrained to take an offing on every approach of foul weather. Our own vessels coming in from sea, and finding an enemy interposed between them and Boston, or being turned from their course by adverse winds, would, in case of the defence of these ports, find to the south of Boston shelter equivalent to those provided in the east, at Marblehead, Salem, Gloucester, and Portsmouth. Plymouth harbor has not been fully surveyed. Provincetown harbor has been surveyed, but the projects of defence have not been formed. The former, it is thought, may be suitably covered by a work of no great cost on Gurnet point; while, to fortify Provincetown harbor in such a way as to cover vessels taking shelter therein, and at the same time to deprive an enemy of safe anchorages, will

involve considerable expense. Probably no nearer estimate can be formed at present than that offered by the Engineer Department some years ago, which gave $100,000 for Plymouth, and $600,000 for Provincetown.—(Statement 1, tables D and E.)

The coast between Cape Cod and Cape Hatteras differs from the north-eastern section, in possessing fewer harbors, in having but little rocky, and a great portion of sandy shore, in its milder climate and clearer atmosphere; and it differs from all the other portions in the depth and magnitude of its interior seas and sounds, and in the distance to which deep-tide navigation extends up its numerous large rivers. The circuit of the coast, not including the shores of the great bays, measures 650 miles; while a straight line from one of the abovenamed capes to the other, measures about 520 miles.

*Martha's Vineyard Sound.*—To the south of Cape Cod lie the islands of Nantucket and Martha's Vineyard, which, with several smaller islands on the south, and the projection of Cape Malabar on the east, enclose the abovenamed sound. The channels through this sound being sufficient for merchant vessels, and one of the channels permitting the passage even of small frigates, are not only the constant tract of coasting vessels, but also of large numbers of vessels arriving in the tempestuous months from foreign voyages. There are, within the sound, the harbors of Tarpaulin cove, Holmes's Hole, Edgartown, Falmouth, Hyannis, and Nantucket, beside smaller anchorages.

In addition to the many thousand vessels passing this water annually, a portion, containing very valuable cargoes, and of which forty or fifty may sometimes be seen in the harbors, awaiting a change of wind, there is supposed to be at least 40,000 tons of whaling vessels owned in the towns of this sound.

If the harbors just named are to be defended at all, it must be by fortifications. There is little or no population, except in the towns, and even this is believed to be entirely without military organization. A privateer might run into either of these harbors and capture, destroy, or levy contributions at pleasure. The use of the sound itself, as an anchorage for vessels of war, cannot be prevented by fortifications alone. $250,000 may, perhaps, suffice for the defence of all the harbors against the kind of enterprise to which they are exposed.—(Statement 1, table F.)

*New Bedford and Fairhaven harbor.*—No survey has been made of this harbor, on which lie two of the most flourishing towns. It is easily defensible; and the amount formerly assumed by the Engineer Department will probably suffice, namely $300,000.—(Statement 1, table D.)

*Buzzard's bay.*—Interposed between the main and the island of Martha's Vineyard, are the Elizabeth islands, which bound Buzzard's bay on the south. This bay covers the harbor of New Bedford, and might be used as an anchorage by an enemy's fleet; but it is too wide to be defended by fortifications.

*Narraganset bay.*—There are three entrances into Narraganset roads:

1st. The eastern channel, which passes up on the east side of the island of Rhode Island. This being shut up by a solid bridge, needs no defence, by fortifications, other than a field-work or two, which may be thrown up at the opening of a war.

2d. The central channel, which enters from sea by passing between Rhode Island and Canonicut island. This is by far the best entrance, and

leads to the best anchorage; and is to be defended by a fort on the east side of the entrance, designed to be the principal work in the system. This work, called Fort Adams, is nearly completed. On the west side of the entrance it is proposed to place another work; and, on an island called Rose island, facing the entrance, a third work. It is also proposed to repair the old fort on Goat island, just within the mouth; and also old Fort Green, which is a little higher up, and on the island of Rhode Island.

3d. As to the western passage, three modes present themselves: 1st. By reducing the depth of water by an artificial ledge, so as while the passage shall be as free as it is now for the coasting trade, it shall be shut as to the vessels of war, including steam-vessels. 2d. By relying on fortifications alone to close the channel; or, 3d. By resorting in part to one and in part to the other mode just mentioned. Either is practicable; but being the least expensive and most certain, the estimates are founded on the first.

The total cost of the Narraganset defences, is estimated at $1,714,000. (Statement 1, tables A, C, D, E, and F.)

*Gardiner's bay.*—It is uncertain whether this harbor, which would be a very valuable one to an enemy investing this part of the coast, is defensible by fortifications alone. After it shall have been surveyed, it may appear that from one or more positions the whole anchorage may be controlled by heavy sea-mortars. In such a case, the defensive works would not be costly. If it be found expedient to fortify some particular portion of the bay, as an anchorage for steam-batteries (which, however, is not anticipated), the expense would probably be as great as was anticipated some years since by the Engineer Department, viz., $400,000.—(Statement 1, table F.)

*Sag Harbor, New York, and Stonington, Connecticut.*—Neither of these harbors have been surveyed with reference to defence. The first is possessed of considerable tonnage; and the second, beside being engaged in commerce, is the terminus of a railroad from Boston. $100,000 may be assigned to the first, and $200,000 to the other.—(Statement 1, tables E and F.)

*New London harbor* is very important to the commerce of Long Island sound; and, as a port of easy access, having great depth of water, rarely freezing, and being easily defended, it is an excellent station for the navy. It is also valuable as a shelter for vessels bound out or home, and desirous of avoiding a blockading squadron off Sandy Hook.

In the plan of defence, the present forts (Trumbull and Griswold) give place to more efficient works, whereof the expense is estimated at $401,000. (Statement 1, tables C and F.)

*Mouth of Connecticut river.*—This river has been shown to be subject to the expeditions of an enemy. No survey has been made with a view to its defences. $100,000 is introduced here as the conjectural cost.—(Statement 1, table F.)

*New Haven harbor.*—It is proposed to defend this harbor by improving and enlarging Fort Hale, and substituting a new work for the slight redoubt erected during the last war called Fort Wooster. The expense of both may be set down at $90,000, exclusive of $5,000 for immediate repairs of old Fort Hale.—(Statement 1, tables A and F.)

There are several towns between New Haven and New York, on both sides of the sound. None of them are very large as yet; still most, if not all, are prosperous and increasing. Although, in their present condition, it might not be deemed necessary to apply any money to permanent de-

fences, yet, as part of the present object is to ascertain, as near as may be, the ultimate cost of completely fortifying the coast, it seems proper to look forward to the time when some of these towns may become objects of predatory enterprises of some magnitude. Bearing in mind the probable increase of population in the meantime, and the situation of the places generally, it is thought that $200,000 will be enough to provide defences for all.—(Statement 1, table F.)

*New York harbor.*—The objects of the projected works for the security of New York are, to cover the city from an attack by land or sea; to protect its numerous shipping; to prevent, as far as possible, the blockade of this great port; and to cover the interior communication uniting this harbor with the Delaware. In the present condition of the defences, an enemy would encounter no great opposition, whether his attack were made by land or water.

There are two avenues to the city, namely: one by the main channel, direct from sea, and one by the sound. If an enemy come by the way of the sound, he may now land his forces on the New York side, at Hell-gate, within less than ten miles of New York, and the next day, at the latest, be in the city; or, he may land on the Long Island side, at the same distance, and in the same time be master of the navy-yard and of Brooklyn heights, whence the city of New York is perfectly commanded; or, he may divide his forces, and reach both objects at the same moment.

The projected system of defence closes this avenue at the greatest distance possible from the city, namely, at Throg's point. The occupation of this point will force the enemy to land more than twenty miles from the city on one side, and still farther from the navy-yard on the other.

A work now in progress at Throg's point will probably prevent any attempt to force this passage. It will, as we have seen, oblige an enemy to land at a considerable distance from the object; and as he will then be unable to turn the strong position afforded by Harlem river, the cover on the New York side will be sufficient.

But should he land on the Long Island side, he might, by leaving parties on suitable positions, with a view to prevent our crossing the river and falling on his rear, make a dash at the navy-yard, having no obstacle in his front. To prevent this effectually, and also to accomplish other objects, a work should be erected on Wilkins's point, opposite Throg's point. This work, beside completing the defence of the channel, would involve a march against the navy-yard from this quarter in great danger; since all the forces that could be collected on the New York shore might, under cover of this work, be crossed over to Long Island, and fall on the rear of the enemy, cutting off his communication with the fleet. The two works on Throg's and Wilkins's points may, therefore, be regarded as perfectly protecting, on that side, the city and navy-yard.

Against an attack by the main channel, there are—

1st. The works in the vicinity of the city, which would act upon an enemy's squadron only after its arrival before the place. They consist of Fort Columbus, Castle Williams, and South Battery, on Governor's island, Fort Wood, on Bedlow's island, and Fort Gibson, on Ellis's island.

It is necessary that these works be maintained, because, in the event of the lower barrier being forced, these would still afford a resource. It is a disadvantage of their positions, however, that the destruction of the city might be going simultaneously with the contest between these forts and the fleet.

They cannot, however, be dispensed with, until the outer barriers are entirely completed, if even then.

2d. At the Narrows, about seven miles below the city, the passage becomes so contracted as to permit good disposition to be made for defence. On the Long Island side of the Narrows, is Fort Lafayette, which is a strong water battery, standing on a reef, at some distance from the shore, and immediately behind it, on the top of the bank, is a small but strong work, called Fort Hamilton. Some repairs being applied to these works, this position may be regarded as well occupied.

On the west side, or Staten Island side of the Narrows, are the following works, belonging to the State of New York, viz.: *Fort Richmond*, which is a water-battery; *Battery Hudson*, which is at some height above the water; *Battery Morton*, which is a small battery on the top of the hill; and *Fort Tomkins*, which is also on the top of the hill, and is the principal work. All these need great repairs; but, being once in proper order, would afford a very important contribution to the defence of the passage; nothing further, indeed, being contemplated for this position, except the construction of a small redoubt on a commanding hill, a little to the southwest. The repairs of these works cannot too soon be taken in hand; and it is hoped some arrangement may soon be made with the State authorities to that end.

With the Narrows thus defended, and the works near the city in perfect order, New York might be regarded as pretty well protected against an attack by water through this passage.

But there lies below the Narrows a capacious bay, affording good anchorage for any number of vessels of war and transports. An enemy's squadron being in that bay, into which entrance is very easy, would set a seal upon this outlet of the harbor. Not a vessel could enter or depart at any season of the year. And it would also intercept the water communication, by the way of the Raritan, between New York and Philadelphia.

The same squadron could land a force on the beach of Gravesend Bay (the place of the landing of the British, which brought on the battle of Long Island, in the Revolutionary war), within seven miles of the city of Brooklyn, of its commanding height, and of the navy-yard with no intervening obstacle of any sort.

This danger is imminent, and it would not fail, in the event of a war, to be as fully realized as it was during the last war; when, on the rumor of an expedition being in preparation in England, twenty-seven thousand militia were assembled to cover the city from an attack of this sort. It is apparent that the defences near the city, and those at the Narrows, indispensable as they are for other purposes, cannot be made to prevent this enterprise; which can be thoroughly guarded against only by

3d. An outer barrier, at the very mouth of the harbor. This would accomplish two objects of great consequence; namely, rendering a close blockade impossible; and obliging an enemy, who should design to move troops against the navy-yard, to land at a distance of more than twenty miles from his object, upon a dangerous beach; leaving, during the absence of the troops, the transports at anchor in the ocean, and entirely without shelter. The hazards of such a land expedition would, moreover, be greatly enhanced by the fact that our own troops, by passing over to Long Island, under cover of the fort at Wilkin's Point, could cut off the return of the enemy to his fleet, which must lie at or somewhere near Rockaway; time, distance, and the direction of the respective marches, would make, very naturally, such a

manœuvre a part of the plan of defence. Against an enemy landing in Gravesend Bay, no such manœuvre could be effectual, on account of the shortness of his line of march, as well as of its direction.

In view of these considerations, the board of engineers projected additional works,—one for the *east bank*, and another for the *middle ground*; these positions being on shoals on either hand of the bar, outside of Sandy Hook. Before determining on the works last mentioned, the board went into much research in order to ascertain whether the shoals were unchangeable; and it was thought to have been fully proved that there had been no material alteration in more than sixy years. This apparent stability of the shoals encouraged the board to devise the project referred to.

Recent surveys have, however, discovered a new, or rather another channel. If it be indeed a *new* channel, it shows a want of stability in the shoals, that forbids any such structures as the contemplated batteries; and it may be necessary to resort to other means. Suitable means exist, unquestionably, though it may not be best to decide on them until all doubt as to the fixed or changing nature of the channel shall be removed; especially, as it must necessarily be some time before the completion of more indispensable works will allow the commencement of these. This may, however, be said with certainty, namely: that, all other means failing, works may be erected on Sandy Hook, which will have a good action upon the channel, and under cover of which, bomb-ketches or steam-batteries, or both, may lie. With such an arrangement, there would be little probability of the lower bay being occupied as a blockading station.

To recapitulate:—The security of the city of New York and the navy-yard requires—first, defences on the passage from the sound, namely: the completion of Fort Schuyler, on Throg's point, and the erection of a fort on Wilkins's point—cost of both $866,000; second, the repair of works on Governor's island, on Bedlow's island, and on Ellis's island—estimated cost $155,000; third, the repair of the works at the Narrows, including the works belonging to the State—cost $450,000; and fourth, the erection of outer defences on or near Sandy Hook—estimated by the board of engineers to cost $3,362,824.

The total cost, exclusive of these last, will therefore be $1,471,000; or, including these, $4,833,824.—(Statement 1, tables A, C, and F.)

*Delaware bay*, *Fort Delaware*, *Fort Mifflin*, *Delaware breakwater*.—The coast from the mouth of the Hudson to the Chesapeake, as well as that on the south side of Long island, is low and sandy, and is penetrated by several inlets; but not one, beside the Delaware, is navigable by sea-going vessels. The Delaware bay itself being wide, and full of shoals, having an intricate channel, and being much obstructed by ice in the winter, affords no very good natural harbor within a reasonable distance of the sea.

The artificial harbor now in course of construction near Cape Henlopen will, it is hoped, fully supply this need; in which event, it must be securely fortified. No plans have, however, as yet been made with that object; and as to the probable cost, nothing better can now be done than to assume the conjectural estimate made some years since in the Engineer Department, namely, $600,000.—(Statement 1, table F.)

The lowest point at which the bay is defensible is at Pea-patch island, about forty-five miles below the city of Philadelphia. A fort on that island, to replace the one destroyed by fire; a fort opposite the Pea-patch, on the Delaware shore, to assist in commanding the Delaware channel, and at the

same time protect the mouth of the Delaware and Chesapeake canal; a temporary work on the Jersey shore, to be thrown up at the commencement of a war, to assist in closing the channel on that side; together with floating obstructions, to be put down in moments of peril, will effectually cover all above this position—including Philadelphia and its navy-yard, Wilmington, New Castle, the canal before mentioned, and the Philadelphia and Baltimore railroad.

The commencement of the rebuilding of Fort Delaware being delayed by difficulties attending the settlement of new claims to the island on which it is to stand, Fort Mifflin, which is an old work, about seven miles below the city of Philadelphia, has been put in good order. This work is ready to receive its armament and its garrison.

The expense of the work on Fort Delaware may be estimated at $491,000, and of the fort opposite, $521,000.—(Statement 1, tables C and F.)

*Chesapeake bay.*—The board of naval officers and engineers intrusted with the selection of sites for a great northern and a great southern naval depot, recommended, in their joint reports of 1819 and 1820, Burwell's bay, on James river, for the one; and Charlestown, in Boston harbor, for the other. They also recommended Boston harbor and Narraganset bay, at the north, and Hampton roads, at the south, as chief naval rendezvous. In those reports the commissioners entered at large into the consideration of all the matters relating to these important objects, and reference is now made to those reports for many interesting details.

*Hampton roads, James river, Norfolk, and the navy-yard.*—The works projected for the defence of these are, 1st, a fort at Old Point Comfort—this is called Fort Monroe; 2d, a casemated battery, called Fort Calhoun, on the Rip Rap shoals, opposite Old Point Comfort; and 3d, a line of floating obstructions extending across the channel from one of these works to the other. It was the opinion of the commissioners above mentioned, that, in the event of a great naval depot being fixed on James river, it might ultimately be proper to provide additional strength, by placing works on the positions of Newport news, Wassaw shoals, and Craney island flats. Such an expansion has, however, since then, been given to the present navy-yard at Gosport (opposite Norfolk), that there is little probability of any other position on these waters being occupied for such purposes.

The great importance of retaining Hampton roads during a war, and of covering the navy-yard, is conceded on all hands. The bearing of this harbor upon the general defence of the Chesapeake bay is, perhaps, equally well understood; it being very evident that a small hostile force would reluctantly venture up the bay, or into York river, or the Rappahannock, or any of the upper harbors, leaving behind them a great naval station, and the common rendezvous of the southern coast—a station seldom, in time of war, without the presence of a number of vessels just ready for, or just returned from sea.

Although there is much important work to be done to complete Fort Monroe, it is even now in a state to contribute largely to the defence of the roadstead; and there is no doubt that in a very short time all the casemated parts may be perfectly ready to receive the armament.

This work will be found in statement 1, table C, $138,367 being required to complete it.

Fort Calhoun cannot yet be carried forward for want of stability in the foundation. The artificial mass on which it is to stand having been raised out of the water, the walls of the battery were begun some years since, but it

was soon found that their weight caused considerable subsidence. On an inspection by engineer officers, it was then decided to keep the foundations loaded with more than the whole weight of the finished work, until all subsidence has ceased. The load had hardly been put on, however, before it was injudiciously determined to take it off and begin to build, although the settling was still going on. Happily, a better policy prevailed before the construction was resumed, but not before the very considerable expense of removing the load had been incurred, and the further expense of replacing it rendered necessary.—(Statement 1, table C.) Required to complete the work, $356,000.

It may be expedient, in time of war, by way of providing interior barriers, to erect batteries on Craney island, at the mouth of Elizabeth river, and to put in condition and arm old Fort Norfolk, which is just below the city.

*Harbor of St. Mary.*—The central situation (as regards the Chesapeake) of this fine basin, its relation to the Potomac, its depth of water, and the facility with which it may be defended, indicate its fitness as a harbor of refuge for the commerce of the Chesapeake bay, and as an occasional, if not constant, station during war of a portion of the naval force. A survey has been made, but no project has been formed. The Engineer Department, some years ago, conjectured that the cost of defences in this harbor might amount to $300,000.—(Statement 1, table F.)

*Annapolis harbor.*—No surveys or plans of defence have been made. The existing works are inefficient and quite out of repair. A former estimate made by the Engineer Department, amounting to $250,000, is adopted here.—(Statement 1, table F.)

*Harbor of Baltimore.*—The proximity of this city to Chesapeake bay greatly endangers the city of Baltimore. In the present state of things, an enemy, in a few hours' march, after an easy landing, and without having his communication with his fleet seriously endangered, can make himself master of that great emporium of commerce. There are required for its security two forts on the Patapsco, one at Hawkins's point, and the other opposite that point, at the extreme end of the flat that runs off from Sollers's point, these being the lowest positions at which the passage of the Patapsco can be well defended. Beside the advantages that will result, of obliging the enemy to land at a greater distance, thereby gaining time, by delaying his march, for the arrival of succor, and preventing his turning the defensive positions which our troops might occupy, it will be impossible for him to endanger the city by a direct attack by water.

The present Fort McHenry, Redoubt Wood, and Covington battery, should be retained as a second barrier. The firstmentioned is now in good condition, and the repairs required for the others may be applied at the beginning of a war.

The fort on Sollers's point flats, which should be first commenced, is estimated to cost $1,000,000.—(Statement 1, table D.)

The fort on Hawkins's point (to be found in statement 1, table F) will cost, it is supposed, $376,000.

*Mouth of Elk river.*—The completion of the line of water communication from the Delaware to the waters of the Chesapeake makes it proper to place a fort somewhere near the mouth of Elk river, in order to prevent an enemy from destroying, by a sudden enterprise, the works forming this outlet of the canal. There have been no surveys made with a view to es-

tablish such protection, which is estimated at $50,000.—(Statement 1, table F.)

*Cities of Washington, Georgetown, and Alexandria.*—Fort Washington covers these cities from any attack by water, and will oblige an enemy to land at some eight or ten miles below Alexandria, should that city be his object, and about twice as far below Washington. It will also serve the very important purpose of covering troops crossing from Virginia with a view to fall on the flanks of an enemy moving against the capital from the Patuxent or the Chesapeake. To put the necessary repairs on Fort Washington will cost about $30,000.—(See statement 1, table A.)

*Cedar point, Potomac river.*—But all these objects would have been better fulfilled had the work been placed at Lower Cedar point. As it is, however, the contemplated works being constructed in the Patuxent, and the militia of the surrounding country in a due state of preparation, an enterprise against Washington would be a hazardous one.

As giving complete security to the towns in the District, covering more than sixty miles in length of the Potomac and the Patuxent, the work on Cedar point should not be omitted. There have been no surveys made of the ground, nor projects of the fort, which, in a conjectural estimate of the Engineer Department, was set down at $300,000. (Statement 1, table E.)

*Patuxent river.*—The more effectually to protect the city of Washington from a sudden attack by troops landed at the head of navigation in the Patuxent, and to provide additional shelter for vessels in the Chesapeake, a fort has been planned to occupy Point Patience, and another to occupy Thomas's point, both a short distance up the river. The work on Thomas's point is (in statement 1, table D) estimated at $250,000; and the work on Point Patience (in statement 1, table F) estimated to cost $246,000.

*Ocracock Inlet, N. C.*—The shallowness of the water on the bars at this inlet effectually excludes all vessels of war—at least, all moved by sails. But as this is an outlet of an extensive commerce, and as through this opening attempts might be made in small vessels, barges, or the smaller class of steam-vessels, to destroy this commerce, or to interrupt the line of interior water communication, timely preparation must be made of temporary works equal to defence against all such minor enterprises.

*Beaufort harbor, N. C.*—A work called Fort Macon has been erected for the defence of this harbor, which will require some repairs. Some operations are also called for to protect the site from the wearing action of the sea. (Statement 1, table A.) Estimate, $10,000.

*Mouths of Cape Fear river, N. C.*—The defence of the main channel of Cape Fear requires, in addition to Fort Caswell (now nearly completed), on Oak island, another fort, to be situated on Bald Head. And the defence of the smaller channel will require a redoubt on Federal point. The battery, magazine, block-house, &c., at Smithville, should remain as accessories. *Fort Caswell*, Oak island (statement 1, table C), requires $6,000 to complete it; the *fort on Bald Head* (statement 1, table F) will require $180,000; the *redoubt on Federal point* (statement 1, table F) will require $18,000; and the battery, &c., called *Fort Johnston*, at Smithville (statement 1, table A), $5,000.

*Georgetown harbor, S. C.*—The first inlet of any consequence south of Cape Fear river is at the united mouths of the Waccamaw, Pedee, and Black rivers, forming Georgetown harbor; which is a commodious and capacious bay, having sufficient water within, and also upon the bar near the

mouth, for merchant vessels and small vessels of war. A survey of this harbor was begun many years ago, but never completed; and no projects for defence have been made. It is probable that a work placed near Moscheto creek, or on Winyaw point, would give adequate strength at the cost of about $250,000. (Statement 1, table E.)

*Santee river and Bull's bay.*—About ten miles south from Georgetown are the mouths of the Santee, the largest river in South Carolina. It is not known whether the bars at the mouths of this river have sufficient water for sea-going vessels. The same uncertainty exists as to the depth into Bull's bay. It may be sufficient to consider these, and the other inlets between Georgetown and Charleston, as calling for small works, capable of resisting boat enterprises, and to assign as the cost $100,000. Should they prove to be navigable for privateers, they will require a larger expenditure. (Statement 1, table F.)

*Charleston, S. C.*—This city, situated at the junction of Ashley and Cooper rivers, is about five miles, in a direct line, from the sea. Between it and the ocean there is a wide and safe roadstead for vessels of any draught. Upon the bar, lying three or four miles outside of the harbor, there is, however, only water enough for smaller frigates and sloops of war. On the southwest side of the harbor is James's island, in which are several serpentine passages, more or less navigable for boats, barges, and small steam-vessels: some of them communicate directly with the sea and Stono river. Whappoo cut, the most northerly passage from the Stono to Charleston harbor, enters Ashley river opposite the middle of the city.

Interior natural water communications exist, also, to the southwest of Stono river, connecting this with North Edisto river; the latter with South Edisto and St. Helena's sound; this, again, with Broad river; and, finally, this last with Savannah river.

On the north side of the harbor of Charleston lies Sullivan's island, separated from the main by a channel navigable only by small craft. On the northwest side of this island is an interior water communication, which extends to Bull's bay, and even beyond, to the harbor of Georgetown.

From this sketch it is apparent that it will not do to restrict the defences to the principal entrance of the harbor. The lateral avenues must also be shut. And it is probable that accurate surveys of all these avenues will show that the best method of defending them will be by works at or near the mouths of the inlet, as the enemy will be kept thereby at a greater distance from the city; the lesser harbors formed by these inlets will be protected; and the line of interior water communication will be inaccessible from the sea.

No position for the defence of the principal entrance to Charleston harbor can be found nearer to the ocean than the western extremity of Sullivan's island. This is at present occupied by Fort Moultrie—a work of some strength, but by no means adequate to its object; its battery being weak, and the scarp so low as to oppose no serious obstacle to escalade. How far this work, by a modification of its plan and relief, may be made to contribute to a full defence of the harbor, has not yet been determined. But so long as it is the only work at this, the principal point of defence, it must be kept in good condition for service; and no alterations that will disturb this efficiency should be undertaken. It is now ready to receive its guns.

On a shoal, nearly opposite to Fort Moultrie, the foundation of a fort has been begun, which will have a powerful cross-fire with Fort Moultrie.

This is called Fort Sumter. (Statement 1, table C.) To complete this work will require, it is estimated, $201,000.

In the upper part of the harbor is Castle Pinckney, on Shuter's Folly island. This work is now ready to receive its guns.

*Stono, North Edisto, and South Edisto.*—All these must be fortified, at least in such a manner as to protect these inlets from enterprises in boats or small vessels. To that end, $50,000 may be assigned to each.—(Statement 1, table F.)

*St. Helena sound.*—The proper defences cannot be pointed out till the sound shall have been surveyed. Although there is supposed to be no great depth of water on the bar, it is known to be navigable for the smaller class of merchantmen, and for steamboats, and to have a navigable communication with the head of Broad river, or Port Royal, intersecting the interior navigation between Charleston and Savannah. The estimate is $150,000.—(Statement 1, table F.)

*Broad river, or Port Royal roads.*—The value of this capacious roadstead, as a harbor of refuge, depends on the depth that can be carried over the bar; on the distance of this bar beyond the line of coast; and on the means that may be applicable of lessening the danger of crossing it. This is supposed to be the deepest bar on the southern coast. Should there prove to be water enough for frigates, and should it be practicable to make the passage over the bar safe and easy, by the erection of light-houses on the shore, and lights, or other distinct guides, on the bar, this harbor, situated within 60 miles of the city of Charleston, and 20 of Savannah river, intersecting the interior water-communication between these cities, thereby securing the arrival of supplies of every kind, would possess a high degree of importance, not only as a harbor of refuge, but also as a naval station.

The survey of the exterior shoals, constituting the bar, should be made with the greatest care and all possible minuteness. Only when this shall have been done, can the true relation of this inlet to the rest of the coast be known; and on this relation the position and magnitude of the required defences will depend. For the present, the estimate made some years ago by the engineer department is adopted, namely, $300,000.—(Statement 1, table E.)

*Savannah, and mouth of Savannah river, Georgia.*—Mention has been made of the natural interior water-communication along the coast of South Carolina. A similar communication extends, south from the Savannah river, as far as the St. John's, in Florida. Owing to these passages, the city of Savannah, like Charleston, is liable to be approached by other avenues than the harbor or river; and, accordingly, its defences must have relation to these lesser, as well as greater channels.

The distance from the mouth of Wassaw sound, or even Ossabaw sound (both to the southward of Savannah river), to the city, is not much greater than from the mouth of the river; and an enterprise may proceed the whole distance by water, or part of the way by water, and part by land, from either inlet, or from both. As in the case of like channels in the neighborhood of Charleston, it cannot now be determined where they can be defended most advantageously. It is hoped, however, that the localities will permit the defences to be placed near the inlets, because, thus placed, they will serve the double purpose of guarding the city of Savannah and covering these harbors, which, in time of war, cannot but be very useful.

The defence of Savannah river is not difficult. A fort on Cockspur isl-

and, lying just within the mouth, and, perhaps, for additional security, another on Tybee island, which forms the southern cape at the mouth of the river, would prevent the passage of vessels up the channel, and cover the anchorage between Tybee and Cockspur.

Old Fort Jackson, standing about four miles below the city, should be maintained as a second barrier, both as respects the main channel and the passages which come into the river from the south; which last would not be at all controlled by works on Cockspur or Tybee. Fort Pulaski, on Cockspur island, is well advanced, and, to a certain extent, is even now efficient. $156,000 are required to complete the works, and the outworks and appendages. (Statement 1, table C.) To fortify Tybee island may require $120,000. (Statement 1, table E.) And to repair Fort Jackson, $50,000. (Statement 1, table A.)

*Wassaw sound; Ossabaw sound; St. Catharine's sound, at the mouth of Medway river; Sapelo sound; Doby inlet; Altamaha sound, at the mouth of Altamaha river; St. Simon's sound, at the mouth of Buffalo creek; St. Andrew's sound, at the united mouths of the Scilla and Santilla rivers; and Cumberland sound, at the mouth of the St. Mary's river.*—All these communications with the ocean are highly important, as regards the line of interior navigation, and several of them as affording access to excellent harbors. The last, and one or two others, are known to be navigable to the largest sloops of war and merchantmen, and some of the others are but little inferior as regards depth of entrance, or safety of anchorage.

All these openings have yet to be surveyed. Some of them are probably easily defensible by forts and batteries, while others may require the aid of floating defences.

It is an important principle, bearing peculiarly on the defence of the whole southern coast, that, on a shore possessing few harbors, it is at the same time more necessary to preserve them all for our own use, and more easy to deprive an enemy of that shelter, without which a close blockade cannot be maintained. This principle is enforced, in the instance of our southern coast, by the two following weighty considerations, namely: 1st. Its remoteness from the nearest naval rendezvous, the Chesapeake, which is, on a mean, 600 miles distant, and to leeward both as to wind and current; and 2d. Its being close upon the larboard hand, as they enter the Atlantic, of the great concourse of vessels passing at all seasons through the Florida channel. While, therefore, this part of the coast, from the concentration of vessels here, is in great need of protection of some sort, naval aid can be extended to it only with difficulty, and at the risk of being cut off from all retreat by a superior enemy.

Accurate and minute surveys, which will enable our vessels, whether pursued by an enemy or suffering by stress of weather, to shun the dangers which beset the navigation of these harbors, and properly arranged defences to cover them when arrived, seem to be indispensable.

When these harbors shall be fortified, the operation of investing the coast and watching the great outlet of commerce through the Florida passage, will be a difficult and hazardous one to an enemy, to whom no perseverance or skill can avail to maintain a continuous blockade; while, on the part of our small vessels of war, steam-frigates, and privateers, the same sort of supervision will be at all times easy and safe.

Nothing better can now be done than to assume $200,000 as the average cost of defending each of the nine entrances—giving a total of $1,800,000. (Statement 1, tables E and F.)

*St. Augustine, Florida.*—This, the most southern of the harbors on the Atlantic, and the key to the eastern portion of Florida, is accessible to the smaller class of merchantmen, to privateers, and to steam-vessels, and requires a certain amount of protection from attacks by water. It is, therefore, proposed to put that part of the old Spanish fort (Fort Marion) that commands the harbor in a serviceable state, which will require $50,000.—(Statement 1, table A.)

Having now passed along the whole Atlantic coast, from Passamaquoddy to Cape Florida, pointed out every harbor of any consequence, and specified every work that a thorough system of defence will require, we will, in order to give a comprehensive view of the number and cost of the works, refer to statement 1 accompanying this report. In that statement the works are divided into tables, showing separately, 1st (table A), the old works already repaired, and those proposed to be repaired and retained in the system of defence. 2d. (Table C.) Works under construction. 3d. (Table D.) Works to be first commenced. 4th. (Table E.) Works to be commenced next after those in table D. 5th.—(Table F.) Works to be last commenced.

*Seacoast from Cape Florida to the mouth of the Sabine.*

The first positions that present themselves on doubling around Cape Florida into the Gulf of Mexico, are *Key West* and the *Dry Tortugas.*

A naval force, designed to control the navigation of the gulf, could desire no better position than Key West or the Tortugas. Upon the very wayside of the only path through the gulf, it is, at the same time, well situated as to all the great points therein. It overlooks Havana, Pensacola, Mobile, the mouths of the Mississippi, and both the inlet and the outlet of the gulf. The Tortugas harbors, in particular, are said to afford perfect shelter for vessels of every class, with the greatest facility of ingress and egress; and there can be no doubt that an adversary in possession of large naval means would, with great advantage, make these harbors his habitual resort, and his point of general rendezvous and concentration for all operations on this sea. With an enemy thus posted, the navigation of the gulf by us would be imminently hazardous, if not impossible; and nothing but absolute naval superiority would avail anything against him. Mere military means could approach no nearer than the nearest shore of the continent.

It is believed that there are no harbors in the gulf at all comparable with these that an enemy could resort to with his larger vessels. To deprive him of these would, therefore, be interfering materially with any organized system of naval operations in this sea. The defence of these harbors would, however, do much more than this. It would transfer to our own squadron, even should it be inferior, these most valuable positions; and it would afford a point of refuge to our navy and our commerce, at the very spot where it would be most necessary and useful.

By occupying two, or at most three small islands, the harbors of the Dry Tortugas (there being an inner and an outer harbor) may be thoroughly protected. The works must be adequate to resist escalade, bombardment, and cannonade from vessels, and to sustain a protracted investment; but as they will not be exposed to any operations resembling a siege, there can be no difficulty in fulfilling the conditions. They must have capacious store-rooms,

be thoroughly bomb-proof, and be heavily armed. The fortification of Key West should be of a similar character.

No details can be given until all these positions have been minutely surveyed with reference to defence.

The sum of $3,000,000 was, some years ago, assumed by the Engineer Department as necessary to provide defences for the Tortugas, and for Key West; and this estimate may now be taken as ample. (Statement 2, table F.)

Turning now to the shore of the gulf, we find a portion, namely, from Cape Florida to Pensacola, that has never been examined with particular reference to the defence of the harbors. Within this space there are *Charlotte harbor*, *Espiritu Santo bay*, *Apalachicola bay*, *Appalache bay*, *St. Joseph's bay*, and *Santa Rosa bay*. Nothing better can now be done than to assume for these the estimate formerly presented by the Engineer Department, viz: $1,000,000 for all.—(Statement 2, table F.)

We now pass on to the remaining points of defence on the gulf.

*Pensacola bay.*—The upper arms of this considerable bay receive the Yellow-water or Pea river, Middle river, and Escambia river. The tributaries of the last, interlocking with the Alabama and the Chattahoochie, seem to mark the routes whereby, at some future day, canals will convey a part of the products of these rivers to Pensacola; while the qualities and position of the harbor, and the favorable nature of the country, have already marked out lines of railroad communication with a vast interior region.

Santa Rosa sound extends eastward from the lower part of Pensacola bay, into Santa Rosa bay. On the west the lagoons of Pensacola, Perdido, and Mobile bays, respectively, interlock in such a manner as to require but a few miles of cutting to complete a navigable channel from the first to the last named bay, and thence, through an existing interior water communication, to the city of New Orleans.

Pensacola bay has rare properties as a harbor. It is now accessible to frigates, and there is reason to hope that the bar may be permanently deepened. The harbor is near the coast, and the channel across it straight and easily hit. The harbor is perfectly land-locked, and the roadstead very capacious. There are excellent positions within, for repairing, building, and launching vessels, and for docks and dock-yards, in healthy situations. The supply of good water is abundant. The harbor is perfectly defensible. These properties, in connexion with the position of the harbor, as regards the coast, have induced the Government to select it as a naval station and place of rendezvous and repair.

The defences of the water passage, as projected, are nearly complete. A work is just begun at the position of the Barrancas. It is indispensable, in connexion with one or two other small works, designed to cover the navy-yard from a lateral attack through the western bays. The Barrancas work may require $100,000, and the others $200,000, making a total for Pensacola of $300,000.—(Statement 2, tables A and F.)

*Perdido bay.*—This bay is intimately related to Pensacola and Mobile bays, both as regards security and intercommunication, and should be carefully surveyed with a view to these objects. It must be fortified, and the cost may be $200,000.—(Statement 2, table F.)

*Mobile bay.*—The plan of defence for this bay comprises a fort, now needing some repairs, for Mobile point. Another fort is projected for Dauphin island, and a tower for the defence of Pass-au-Heron. The estimates for all require $905,000.—(Statement 2, tables E and F.)

*New Orleans and the delta of the Mississippi.*—The most northern water communication between the Mississippi and the gulf, is by the passage called the Rigolets, connecting Lake Borgne and Lake Pontchartrain. The next is the pass of Chef Menteur, also connecting these lakes. Through these passages, an enemy entering Lake Pontchartrain, would, at the same time that he intercepted all water communication with Mobile and Pensacola, be able to reach New Orleans from the southern shore of the lake; or he might continue onward through lake Maurepas, Amité river, and Iberville river, thereby reaching the Mississippi at the very head of the delta; or, landing within the mouths of the Chef Menteur, he might move against the city along the ridge of the Gentilly road. To the southwest of Chef Menteur, and at the head of Lake Borgne, is Bayou Bienvenue, a navigable channel (the one followed by the English army in the last war), not running quite to the Mississippi, but bounded by shores of such a nature as to enable troops to march from the point of debarkation to the city.

These avenues are defended by Fort Pike at the Rigolets; by Fort Wood at Chef Menteur; hy a small fort at Bayou Bienvenue; and by a tower at Bayou Dupré.

The defences of the Mississippi are placed at the Plaquemine turn, about seventy miles below New Orleans—the lowest position that can be occupied. Fort Jackson is on the right bank, and Fort St. Philip a little lower down on the left.

All these forts have been abandoned for several years; and, until quite recently, having received no attention in the way of timely repairs, now require repairs somewhat extensive—especially Forts Jackson and St. Philip on the Mississippi. Fifty thousand dollars will be required to place all these works in order. (Statement 2, table A.)

The most western avenue by which New Orleans is approachable from the sea, passes on the west side of the island of Grande Terre into Barrataria bay, which is an excellent harbor for a floating force, guarding the coast trade on that side of the Mississippi. From this bay there are several passages leading to New Orleans. The estimates for a work which is now about to be begun on Grande Terre island, is $280,000. (Statement 2, table C.)

Several times in this report we have alluded to circumstances which would demand the employment of floating defences, in addition to fixed defences upon the shore. We have here an instance in which that kind of defence would be very useful. Fortifications will enable us to protect New Orleans even from the most serious and determined efforts of an enemy; but, owing to the great width of some of the exterior passages, we cannot, by fortification alone, deprive an enemy of anchorages (especially that of Chandeleur island), nor cover entirely the exterior water communication between the Rigolets and Mobile. We must, therefore, either quietly submit to the annoyance and injury that an enemy in possession of these passages may inflict, or avert them by a timely preparation of a floating force adapted to their peculiar navigation, and capable, under the shelter of the forts, of being always on the alert, and of assuming an offensive or defensive attitude, according to the designs, conduct, or situation of the enemy.

The examination of the coast, from Cape Florida to the Sabine, having now been completed, we will, as in the case of the Atlantic coast, refer, for a comprehensive view of the number and cost of the works, to statement 2, wherein the works are divided into tables similar to those of statement 1.

The works comprised in the last table (F) are generally such as may be

postponed to a late day. But among them have been placed some (as, for example, those for Tortugas and Key West), as to which the examination has not been sufficiently minute to decide to what class they really appertain.

*Western frontier, from the Sabine bay to Lake Superior.*

The principles which should govern in fortifying the seaboard, are not considered applicable to our inland frontiers, which will very rarely be found to call for regular fortifications. Hence, in relation to that portion of the frontier now under consideration, nothing more will be done than to indicate the military positions or stations which it is believed should be occupied by troops, in order to accomplish the objects in view, and in presenting estimates of the probable cost of constructing the necessary barracks, quarters, and storehouses, combined with such works of defence as circumstances may appear to require, to ensure their protection against the attacks to which they may be exposed.

The want of a personal knowledge of our extensive western frontier, and the very limited surveys which have been made in that quarter, have rendered somewhat embarrassing the selection of positions; but it is intended merely to designate places, in a geographical sense, leaving the particular sites on which the works should be erected, to be determined hereafter by minute examinations of the country at and around those positions; which become the more important, inasmuch as the original locations of some of the places that will be recommended to be retained, have been considered faulty.

The southern section of this frontier, extending from the Sabine bay to the Red river, borders all the way on Texas; and has, it is believed, little or nothing to apprehend from Indian aggressions. The Camanches, the only tribe of any power in that quarter, are represented as gradually receding to the westward, and the progress of the Texian settlements will tend to push them further from our border. But our relations with the Texian Republic, however amicable they may be at present, would seem to require that some military force should be stationed on or near the boundary-line; and it is, therefore, recommended to establish two small posts on the Sabine river, and to suppress Fort Jesup, which is considered too far within the frontier, or to retain it merely as a healthy cantonment.

As these would be posts of observation, having reference to national police more than to military defence, they ought to be established on the river, where the principal roads cross it, by which we should be enabled to supervise the chief intercourse with our neighbors by land, and, at the same time, control the navigation of the Sabine. The points where the Opelousas and Natchitoches roads, leading to Texas, strike the river, are, therefore, recommended as the positions which should be occupied, and at which barracks for two or three companies, defended by light-works, should be constructed.

The middle section, which extends from the Red river to the Missouri, is by far the most important portion of the whole of our western frontier. It is along this line that the numerous tribes of Indians who have emigrated from the east have been located; thus adding to the indigenous force already in that region an immense mass of emigrants, some of whom have been sent thither by coercion, with smothered feelings of hostility rankling in their bosoms, which probably wait but for an occasion to burst

forth in all its savage fury. These considerations alone would seem to call for strong precautionary measures; but an additional motive will be found in our peculiar relations with those Indians.

We are bound by solemn treaty stipulations to interpose force, if necessary, to prevent domestic strife among them, preserve peace between the several tribes, and to protect them against any disturbances at their new homes by the wild Indians who inhabit the country beyond. The Government has thus contracted the two-fold obligation of intervention among, and protection of, the emigrant tribes, in addition to the duty which it owes to its own citizens, of providing for their safety.

This obligation, it is believed, can only be properly fulfilled by maintaining advanced positions in the Indian country, with an adequate restraining military force; and that the duty of protecting our own citizens will be best discharged by establishing an interior line of posts along the western borders of the States of Arkansas and Missouri, as auxiliaries to the advanced positions, and to restrain the intercourse between the whites and the Indians, and serve as rallying points for the neighboring militia in times of alarm.

With these views, it is recommended to maintain Fort Towson, on Red river, and Fort Gibson, on the Arkansas, and to establish a post at the head of navigation on the Kansas, and one at Table creek, on the Missouri, below the mouth of the Big Platte, as constituting the advanced positions on this portion of the frontier.

For the secondary line, intended for the protection of the border settlements, it is recommended to adopt the positions which have been selected by a commission of experienced officers along the western boundary of Arkansas and Missouri (at some of which, it is understood, works are already in progress), namely, Fort Smith, on the Arkansas, Fort Wayne, on the Illinois, Spring river, and Marais de Cygne; terminating, to the north, at Fort Leavenworth, on the Missouri. It is also recommended to establish one or two intermediate posts between the Arkansas and Red rivers, if, on further examination of the country, suitable positions can be selected near the State line. It is not deemed advisable to establish those posts on the route of the road lately surveyed, which (especially the southern portion) is considered too far in advance of the border settlements to accomplish the object in view; but if eligible positions cannot be found along the line, then a post on the road, where it crosses the Potean river, which is not very remote from the settlements, might have a salutary influence.

On the northern portion of this frontier, extending from the Missouri river to Lake Superior, it is recommended to establish a post near the upper forks of the Des Moines river; to maintain Fort Snelling, on the Mississippi; and ultimately, to establish a post at the western extremity of Lake Superior. The last is suggested with some qualification, for want of the necessary information by which to determine the channel of communication to that remote position. Whether it shall be through Lake Superior, or by the Mississippi and its tributaries, it would, in either case, be difficult in peace, and next to impracticable in time of war. As the position has, however, important geographical relations, and would enable us to extend our influence and control over the Indians within our territory, and afford protection to our traders in that remote region, it would seem worthy of early occupation, if its maintenance can be rendered secure—a point which can only be determined by a careful examination of the country.

It is, nevertheless, recommended to retain Fort Crawford, at Prairie du Chien; Fort Winnebago, at the portage of the Fox and Wisconsin rivers; and Fort Howard at Green Bay. These posts are deemed necessary to protect that portion of our frontier, while, at the same time, they serve to cover an important line of intercommunication between the northern lakes and the western waters.

It has not been thought expedient to continue the interior line of defence across from the Missouri to the Mississippi river. Our Indian relations in that quarter assume a different aspect. There is no special guarantee of perpetual occupation of that country by the tribes who now inhabit it; nor can it be doubted that they will ultimately be pushed, by the advance of our population, to the west of the Missouri river. Under these circumstances, it is believed that the intermediate post recommended to be established on the Des Moines river, co-operating with the posts on the Missouri, and those on the Upper Mississippi, will afford adequate protection to the border settlements against any attacks to which they are likely to be exposed.

It may not be amiss to observe, that the positions which have been designated for the western frontier, will not, of themselves, have the desired influence in restraining the Indian tribes and protecting our border settlements, without the aid of a respectable force, of which a full proportion should be mounted, and held disposable at all times, for active service in the field. To effect this, the works should be so constructed that while they will afford adequate accommodations for all the troops when they are not actively employed, their defence may safely be intrusted to a small force. With these precautionary measures, and the co-operation of small but effective reserves, posted within sustaining distances of the several sections of the frontier, it is believed that peace may be preserved, and the first onset of war met, until the militia of the neighboring country could be imbodied and brought into the field.

It only remains to recapitulate the positions which have been recommended to be occupied, apportion the requisite force, and present a conjectural estimate of the cost of erecting the accommodations and defences deemed necessary at each.

| | |
|---|---|
| 1. For quarters for 100 men at the post on the Sabine where the Opelousas road crosses that river, including defences | $20,000 00 |
| 2. For quarters for 100 men at the post on the Sabine where the Natchitoches road crosses, including defences - | 20,000 00 |
| 3. For permanent quarters, and other accommodations, for 500 men at Fort Towson, including defences - - | 100,000 00 |
| 4. For permanent quarters, and other accommodations, for 1,000 men at Fort Gibson, including defences - - | 180,000 00 |
| 5. For quarters for 300 men at the post on the Kansas, including defences - - - - - | 60,000 00 |
| 6. For quarters, and other accommodations, for 500 men at the post at Table creek, near the mouth of the Platte, on the Missouri, including defences - - - | 75,000 00 |
| 7. For quarters, and other accommodations, for 400 men at the post on the Des Moines river, including defences - | 60,000 00 |
| 8. For the enlargement and repair of Fort Snelling, to fit it for the accommodation of 300 men, including defences | 30,000 00 |
| 9. For quarters for 400 men at the post at the western extremity of Lake Superior, including defences - - | 50,000 00 |

INTERIOR LINE.

| | | |
|---|---|---|
| 10. | For quarters for 200 men at the post between the Red and Arkansas rivers, including defences - - | $50,000 00 |
| 11. | For completing quarters, and other accommodations, for 200 men at Fort Smith, including defences - - | 50,000 00 |
| 12. | For completing quarters, and other accommodations, for 200 men at Fort Wayne, including defences - - | 59,000 00 |
| 13. | For quarters, and other accommodations, for 200 men at the post at Spring river, including defences - - | 50,000 00 |
| 14. | For quarters, and other accommodations, for 200 men at the post at Marais de Cygne, including defences - | 50,000 00 |
| 15. | For completing quarters, and other accommodations in progress, for 400 men at Fort Leavenworth, including defences - - - - - - | 50,000 00 |
| | Total for western frontier | 895,000 00 |

It is deemed proper here to observe, that great exactness or precision has not been attempted in preparing the estimates submitted in the foregoing report. Hence, the amounts stated for the various objects are to be regarded only as approximations. They could not be anything more, on the data used, which, for want of minute surveys and reconnoissances, were necessarily vague. It is believed, however, that the results presented will be found sufficiently accurate for the general purposes contemplated by the resolutions under which this report has been prepared.

The time required to construct and put in order the whole system of defence upon the several lines of our frontier, must depend on the amount of the annual appropriation. All that need now be said on the subject is, that in an undertaking necessarily involving so much time, and of such vital importance, there should be no relaxation of diligence. With all diligence, many years must necessarily be consumed. But the work may be too much hurried, as well as too much delayed. There is a rate of progress at which it will be executed in the best manner, and at the minimum cost. If more hurried, it will be defective in quality, and more costly if delayed.

The maximum amount that can be beneficially expended *annually* upon the construction of fortifications, will depend upon the strength of the corps of engineers, upon the sums annually appropriated, upon the periods of the sessions at which the appropriations are made, and upon the proper distribution of the sums appropriated among the several works under construction.

If the necessary amounts are appropriated, at or near the commencement of each regular session of Congress, and the whole amount distributed along the coast, so as not to assign too large a sum to any single work, it is believed that, with the present strength of the corps of engineers, the sum of four and a half millions of dollars, at least, may be annually expended, until the system adopted for the defence of our frontier shall have been so far advanced, as to render it proper to curtail the operations.

There are available for operations, six field officers of the corps of engineers, who may each superintend operations and disbursements to the amount of $300,000 - - - - - $1,800,000
12 captains, each $150,000 - - - - - - 1,800,000
12 first lieutenants, each $75,000 - - - - 900,000

4,500,000

leaving 24 2d lieutenants and brevet 2d lieutenants, as assistant engineers.

The past experience of the department justifies the belief, that, with the present strength of the corps of engineers, this sum may be annually expended on a system of operations conducted in a prudent and beneficial manner. Upon the occurrence of any sudden emergency, however, an additional force might be temporarily called to the aid of the corps, and a much larger sum might be expended.

All which is respectfully submitted.

JOS. G. TOTTEN,
*Colonel and Chief Engineer.*

Hon. JOHN BELL,
*Secretary of War.*

## STATEMENT 1,

*Of the fortifications constructed, constructing, or repairing, and of those proposed to be constructed or repaired for the defence of the seacoast from Passamaquoddy bay to Cape Florida.*

| Classification. | Designation of the works. | Required to complete. |
|---|---|---|
| | A.—*Old works repaired, and those proposed to be repaired, with the amounts required to put them in a serviceable condition.* | |
| 1 | Fort at Gloucester, Mass. | $10,000 |
| 2 | Fort Lee, Mass. | 2,000 |
| 3 | Fort Sewall, Marblehead, Mass. | 10,000 |
| 4 | Fort Independence, Boston, Mass. | 95,000 |
| 5 | Fort Winthrop, Governor's Island, Boston, Mass. | 100,000 |
| 6 | West-head battery, Governor's island, Boston, Mass. | 5,000 |
| 7 | Southeast battery, Governor's island, Boston, Mass. | 5,000 |
| 8 | Fort Wolcott, Newport, R. I. | 10,000 |
| 9 | Fort Green, Newport, R. I. | 2,000 |
| 10 | Fort Hale, New Haven, Conn. | 5,000 |
| 11 | Fort Gibson, Ellis's island, N Y. | 5,000 |
| 12 | Fort Wood, Bedlow's island, N. Y. | 150,000 |
| 13 | Fort Richmond, Staten island, N. Y. | 450,000 |
| 14 | Fort Tompkins, Staten island, N. Y. | |
| 15 | Battery Hudson, Staten island, N. Y. | |
| 16 | Battery Morton, Staten island, N. Y. | |
| 17 | Fort Johnston, Cape Fear river, N. C. | 5,000 |
| 18 | Fort Washington, Potomac river, Md. | 35,000 |
| 19 | Fort Macon, Beaufort, N. C. | 10,000 |
| 20 | Fort Jackson, Savannah river, Georgia | 50,000 |
| 21 | Fort Marion, St. Augustine, Florida | 50,000 |
| | | 999,000 |
| | C.—*Works under construction.* | |
| 1 | Fort Warren, George's island, Boston, Mass. | $275,000 |
| 2 | Fort Adams, Newport, R. I. | 45,000 |
| 3 | Fort Trumbull, New London, Conn. | 203,000 |
| 4 | Fort Schuyler, Throg's Neck, N. Y. | 180,000 |
| 5 | Fort Delaware, Delaware river | 491,000 |
| 6 | Fort Monroe, Old Point Comfort, Va. | 138,367 |
| 7 | Fort Calhoun, Hampton roads, Va. | 356,000 |
| 8 | Fort Caswell, Oak island, N. C. | 6,000 |
| 9 | Fort Sumter, Charleston, S. C. | 201,000 |
| 10 | Fort Pulaski, Cockspur island, Georgia | 156,000 |
| | | 2,051,367 |

STATEMENT 1—Continued.

| Classification. | Designation of the works. | Required to complete. |
|---|---|---|
| | D.—*Works to be first commenced.* | |
| 1 | Fort at Bucksport, Penobscot river, Me. | $150,000 |
| 2 | Fort at the mouth of Kennebec river, Me. | 300,000 |
| 3 | Fort Scammel, House island, Portland, Me. | 48,000 |
| 4 | Works in Portsmouth harbor, N. H. | 300,000 |
| 5 | Fort Pickering, Salem, Mass. | 174,000 |
| 6 | Fort on Jack's point, Marblehead, Mass. | 144,000 |
| 7 | Works at Provincetown, Cape Cod, Mass. | 600,000 |
| 8 | Works at New Bedford, Mass. | 300,000 |
| 9 | Fort on Rose island, Narraganset roads, R. I. | 150,000 |
| 10 | Fort on Soller's point flats, Md. | 1,000,000 |
| 11 | Fort on Thomas's point, Patuxent river, Md. | 250,000 |
| | | 3,416,000 |
| | E.—*Works to be commenced next after those in D.* | |
| 1 | Fort Preble, Portland harbor, Me. | $155,000 |
| 2 | Works at Gloucester, Mass. | 200,000 |
| 3 | Closing Broad Sound pass, Boston harbor, Mass. | 210,000 |
| 4 | Works at Gurnet point, Plymouth, Mass. | 100,000 |
| 5 | Works at Stonington point, Conn. | 200,000 |
| 6 | Fort on Cedar point, Potomac river, Md. | 300,000 |
| 7 | Works at Georgetown harbor, S. C. | 250,000 |
| 8 | Works in Port Royal roads, S. C. | 300,000 |
| 9 | Works on Tibee island, Savannah river, Ga. | 120,000 |
| | | 1,835,000 |
| | F.—*Works to be last commenced.* | |
| 1 | Works in Eastpost harbor, Me. | $100,000 |
| 2 | Works in Machias harbor, Me. | 100,000 |
| 3 | Works in Mount Desert island, Me. | 500,000 |
| 4 | Works at Castine, Me. | 50,000 |
| 5 | Works at St. George's bay, Me. | |
| 6 | Works at Damariscotta bay, Me. | |
| 7 | Works at Broad bay, Me. | 400,000 |
| 8 | Works at Sheepscot bay, Me. | |
| 9 | Works on Hog island channel, Portland, Me. | 135,000 |
| 10 | Works at the mouth of Saco river, Me. | |
| 11 | Works at the mouth of Kennebunk river, Me. | 75,000 |
| | Works at York, Me. | |

STATEMENT 1—Continued.

| Classification. | Designation of the works. | Required to complete. |
|---|---|---|
| 13 | Works at Newburyport, Mass. | $100,000 |
| 14 | Works at Beverly, Mass. | 50,000 |
| 15 | Works at Naugus Head, Mass. | 51,000 |
| 16 | Works at Fort Sewall, Marblehead, Mass. | 174,000 |
| 17 | Fort and outworks at Nantasket Head, Boston, Mass. | 1,020,000 |
| 18 | Redoubt on Hog island, Boston harbor, Mass. | |
| 19 | Works at Tarpaulin cove, Mass. | 250,000 |
| 20 | Works at Holmes's hole, Mass. | |
| 21 | Works at Edgartown, Mass. | |
| 22 | Works at Falmouth, Mass. | |
| 23 | Works at Hyannis harbor, Mass. | |
| 24 | Works at Nantucket harbor, Mass. | |
| 25 | Works at Canonicut island, R. I. | 1,200,000 |
| 26 | Closing west passage of Narraganset roads, R. I. | 307,000 |
| 27 | Fort Griswold, New London, Ct., | 198,000 |
| 28 | Works at the mouth of Connecticut river, Ct. | 100,000 |
| 29 | Fort Hale, New Haven harbor, Ct. | 48,000 |
| 30 | Fort Worster, New Haven harbor, Ct. | 42,000 |
| 31 | Works for harbors and towns between New Haven and New York | 200,000 |
| 32 | Work in Gardiner's bay, Long Island sound, N. Y. | 400,000 |
| 33 | Works in Sag harbor, N. Y. | 100,000 |
| 34 | Fort on Wilkins's point, Long island, N. Y. | 686,000 |
| 35 | Fort on Middle-ground shoal, Sandy Hook, N. Y. | 1,681,412 |
| 36 | Fort on East Bank shore, Sandy Hook, N. Y. | 1,681,412 |
| 37 | Fort at Delaware breakwater | 600,000 |
| 38 | Fort opposite Fort Delaware, Del. | 521,000 |
| 39 | Fort on Elk river, Maryland | 50,000 |
| 40 | Fort on Hawkins's point, Maryland | 376,000 |
| 41 | Works at Annapolis harbor, Maryland | 250,000 |
| 42 | Fort on Point Patience, Patuxent river, Maryland | 246,000 |
| 43 | Works at St. Mary's, Potomac river, Maryland | 300,000 |
| 44 | Works at Bald Head, Cape Fear river, N. C. | 180,000 |
| 45 | Works at Federal point, Cape Fear river, N. C. | 18,000 |
| 46 | Works at the mouth of Santee river, S. C. | 100,000 |
| 47 | Works at Bull's bay, and other inlets, S. C. | |
| 48 | Works at Stone sound, S. C. | 50,000 |
| 49 | Works at North Edisto sound, S. C. | 50,000 |
| 50 | Works at South Edisto sound, S. C. | 50,000 |
| 51 | Works at St. Helena sound, S. C. | 150,000 |

STATEMENT 1—Continued.

| Classification. | Designation of the works. | Required to complete. |
|---|---|---|
| 52 | Works at Wassaw sound, Georgia - - | |
| 53 | Works at Ossabaw sound, Georgia - - | |
| 54 | Works at St. Catharine's sound, Georgia - | |
| 55 | Works at Sapelo sound, Georgia - - | |
| 56 | Works at Doby inlet, Georgia - - | $1,800,000 |
| 57 | Works at Altamaha sound, Georgia - - | |
| 58 | Works at St. Simon's sound, Georgia - | |
| 59 | Works at St. Andrew's sound, Georgia - | |
| 60 | Cumberland sound, mouth of St. Mary's river, Ga. | |
| | | 14,389,824 |
| | *Recapitulation.* | |
| | A. Old forts and batteries - - - - | $999,000 |
| | C. Fortifications under construction - - - | 2,051,367 |
| | D. Fortifications to be first commenced - - | 3,416,000 |
| | E. Fortifications to be next constructed - - | 1,835,000 |
| | | 8,301,367 |
| | F. Fortifications to be last commenced - - | 14,389,824 |
| | | 22,691,191 |

ENGINEER DEPARTMENT,
*Washington, July* 1, 1841.

## STATEMENT 2,

*Of the fortifications constructed, constructing, or repairing, and of those proposed to be constructed or repaired, for the defence of the gulf frontier, from Cape Florida to the Sabine bay.*

| Classification. | Designation of the works. | Required to complete. |
|---|---|---|
| | A.—*Old works repaired, and those proposed to be repaired, and the amounts required to put them in a serviceable condition.* | |
| 1 | Fort Barrancas, Pensacola, Florida | $100,000 |
| 2 | Fort St. Philips, Mississippi river, La. | |
| 3 | Fort Pike, Rigolets, La. | |
| 4 | Fort Wood, Chef Menteur, La. | |
| 5 | Battery Bienvenue, La. | 50,000 |
| 6 | Tower at Bayou Dupre, La. | |
| 7 | Fort Jackson, Mississippi river, La. | |
| | | 150,000 |
| | C.—*Works under construction.* | |
| | Fort Livingston, Barrataria island, La. | $280,000 |
| | E.—*Works to be constructed after those in* D, *of statement* 1, *are completed.* | |
| 1 | Tower at Pass au Heron, Mobile bay, Alabama | $25,000 |
| | F.—*Works to be last commenced.* | |
| 1 | Works at Key West, or Tortugas, Florida | $3,000,000 |
| 2 | Works at Charlotte harbor, Florida | |
| 3 | Works at Esperitu Santo bay, Florida | |
| 4 | Works at Appalachicola bay, Florida | |
| 5 | Works at Appalachee bay, Florida | 1,000,000 |
| 6 | Works at St. Joseph's bay, Florida | |
| 7 | Works at Santa Rosa bay, Florida | |
| 8 | Works to cover navy-yard at Pensacola | 200,000 |
| 9 | Works at Perdido bay, Alabama | 200,000 |
| 10 | Fort at Dauphin island Mobile bay, Alabama | 880,000 |
| | | 5,280,000 |

STATEMENT 2—Continued.

| *Recapitulation.* | |
|---|---|
| A. Old forts and batteries - - - - | $150,000 |
| C. Fortifications under construction - - - | 280,000 |
| E. Works to be constructed after those in D, of statement 1, are completed - - - - | 25,000 |
| | 455,000 |
| F. Works to be last commenced - - - | 5,280,000 |
| | 5,735,000 |

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*Report from the Ordnance Department, in answer to a resolution of the Senate relative to the defences of the country.*

ORDNANCE OFFICE,
*Washington, June* 21, 1841.

SIR: On the subject of the Senate's resolution of the 3d of March last, relative to the defence of the country, which was referred by you to this office, I have the honor to report: A resolution of the same tenor, and (with the exception of the 7th paragraph) in the same words, was adopted by the Senate on the 2d of March, 1839. The subject was referred to a board of officers, whose report is printed in the Senate doc. No. 451 of the 1st session, 26th Congress. To that report I beg leave to refer for an answer to such parts of the present resolution as relate to this department, and from it the following condensed statement is extracted:

## *Statement of the amount of ordnance, ordnance stores, &c., on hand and required.*

| Seacoast from Passamaquoddy to Cape Florida. | | Heavy cannon. | Field cannon. | Heavy carriages. | Field carriages. | Shot and shells. | Powder (lbs). | Cost of stores to be provided. |
|---|---|---|---|---|---|---|---|---|
| Old forts and batteries, table A | Required | 1,040 | 57 | 1,040 | 57 | 109,700 | 878,800 | |
| | On hand | 894 | 57 | 681 | 57 | 98,755 | 878,800 | |
| | To be provided | 146 | – | 359 | – | 10,945 | – | $210,937 60 |
| New fortifications completed, table B | Required | 322 | 14 | 322 | 14 | 33,600 | 205,800 | |
| | On hand | 190 | 14 | 153 | 14 | 24,848 | 60,170 | |
| | To be provided | 132 | – | 169 | – | 8,752 | 145,630 | 134,095 00 |
| Fortifications under construction, table C | Required | 2,254 | 33 | 2,254 | 33 | 228,700 | 1,616,300 | |
| | On hand | 1,309 | 33 | 257 | 33 | 122,000 | – | |
| | To be provided | 945 | – | 1,997 | – | 106,700 | 1,616,300 | 1,465,435 00 |
| Fortifications to be first commenced, table D | Required | 1,249 | 23 | 1,249 | 23 | 127,700 | 874,300 | |
| | On hand | 738 | 23 | – | 23 | 22,320 | – | |
| | To be provided | 511 | – | 1,249 | – | 105,480 | 874,300 | 889,111 60 |
| Fortifications to be next constructed, table E | Required | 717 | 39 | 717 | 39 | 75,600 | 471,300 | |
| | On hand | 24 | 39 | – | 39 | 7,954 | – | |
| | To be provided | 683 | – | 717 | – | 67,646 | 471,300 | 652,919 40 |
| Fortifications to be last constructed, table F | Required | 4,651 | 139 | 4,651 | 139 | 479,000 | 3,388,750 | |
| | On hand | 86 | 139 | – | 139 | 33,400 | – | |
| | To be provided | 4,565 | – | 4,651 | – | 445,600 | 3,388,750 | 4,573,828 00 |

Gulf of Mexico, from Cape Florida to the Sabine.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Old forts and batteries, table A | Required | 66 | 3 | 66 | 3 | 6,900 | 38,950 | |
| | On hand | 45 | 3 | 37 | 3 | 6,000 | 38,950 | |
| | To be provided | 21 | – | 29 | – | 900 | – | 14,606 00 |
| New fortifications completed, table B | Required | 520 | 12 | 520 | 12 | 53,200 | 327,450 | |
| | On hand | 306 | 12 | 228 | 12 | 37,600 | 95,735 | |
| | To be provided | 214 | – | 292 | – | 15,600 | 231,715 | 228,307 00 |
| Fortifications under construction, table C | Required | 175 | 6 | 175 | 6 | 18,100 | 122,400 | |
| | On hand | 124 | 6 | 13 | 6 | 9,815 | – | |
| | To be provided | 51 | – | 162 | – | 8,285 | 122,400 | 110,179 00 |
| Works to be constructed after those in table D, statement 1, are completed, table E | Required | 12 | – | 12 | – | 1,200 | 6,700 | |
| | On hand | 2 | – | – | – | 400 | – | |
| | To be provided | 10 | – | 12 | – | 800 | 6,700 | 9,108 00 |
| Works to be last commenced, table F | Required | 903 | 25 | 903 | 25 | 92,800 | 579,850 | |
| | On hand | 21 | 25 | – | 25 | 10,400 | – | |
| | To be provided | 882 | – | 903 | – | 82,400 | 579,850 | 809,559 00 |
| Western frontier, from the Sabine to Lake Superior | | 12 | 139 | 12 | 139 | 15,100 | 25,250 | 44,097 00 |
| Northern frontier, from Lake Superior to Passamaquoddy | | 375 | 180 | 375 | 180 | 55,500 | 197,600 | 342,322 00 |
| Total to be provided | | 8,547 | 319 | 10,927 | 319 | 923,708 | 7,659,795 | 9,484,504 60 |

In reply to the 7th paragraph of the resolution, I beg leave to present a copy of a report made to the Secretary of War in February last, showing the greatest amount of funds which could be beneficially expended annually in this department in preparations for the national defence. Working at the rate there stated, it would require about twenty-five years to provide all the armament for the fortifications embraced in the projected system of defence; but it is to be remarked that more than *one half* of that quantity to be provided, is for the fortifications on the seaboard embraced in table F, designated as those to be last constructed, and which would probably be built at a very distant day.

Very respectfully, your obedient servant,

G. BOMFORD,
*Colonel of Ordnance.*

Hon. JOHN BELL,
*Secretary of War.*

—

ORDNANCE OFFICE,
*Washington, February* 19, 1841.

SIR: Herewith I have the honor to submit a brief statement of the ordnance and ordnance stores, that may be readily provided during the present year, together with an estimate of the cost of the same, amounting, in round numbers, to one million of dollars; should it be required, a statement in detail will be promptly prepared.

It is proper to state that the operative means of this department, in connexion with the public arsenals and the private foundries and workshops, are fully adequate to prepare during the present year, advantageously, and at fair prices, at least one half of the ordnance and ordnance stores enumerated in the accompanying statement. These means can also be much extended in the course of the year, should the public service demand it.

Very respectfully, your obedient servant,

G. BOMFORD,
*Colonel of Ordnance.*

Hon. J. R. POINSETT,
*Secretary of War.*

—

*Estimate of the probable amount of funds that can be advantageously expended, per annum, by the Ordnance Department, for procuring cannon, carriages, cannon-shot, artillery, and other equipments, &c., &c.*

| | |
|---|---|
| For 600 heavy cannon, including 10 and 8 inch heavy howitzers, averaged at $450 each - - - | $270,000 |
| " 300 heavy gun carriages and equipments, at $400 each - | 120,000 |
| " 150 bronze field guns, averaged at $400 each - - | 60,000 |
| " 100 iron " " " 120 " - - | 12,000 |
| " 250 field gun carriages and equipments, averaged at $300 each - - - - - - | 75,000 |

| | |
|---|---|
| For cannon, shot, shells, &c., the supply of which may be increased to quadruple the amount - - - | $100,000 |
| " 2,000 sets of accoutrements for infantry and rifle, at $3 84 each - - - - - - | 76,800 |
| " 500 sets of artillery harness, complete, at $80 50 each - | 40,250 |
| " 20,000 sets of cavalry equipments, complete, at $12 each-- | 24,000 |
| " 2,000 sets of horse " " " 32 " - | 64,000 |
| " timber for 1,000 gun carriages, at $30 each - - | 30,000 |
| " iron for 1,000 " " 60 " - - | 60,000 |
| " saltpetre, $25,000, sulphur, $5,000, and gunpowder, 37,950 - - - - - - | 67,950 |
| | $1,000,000 |